

# 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<sup>-6</sup>/K 18.0

Density g/cm<sup>3</sup> 8.93

Modulus of elasticity GPa 130

\*Reference values at room temperature

## 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

## 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 20 %  
(CuZn39Pb3 = 100 %)

Capacity for being cold worked excellent

Capacity for being hot worked excellent

### Surface treatment

Polishing

mechanical good

electrolytic good

Electroplating good

## Joining

Resistance welding (butt weld) fair

Inert gas shielded arc welding excellent

Gas welding excellent

Hard soldering excellent

Soft soldering excellent

## Heat treatment

Melting range 1065–1075 °C

Hot working 800–950 °C

Soft annealing 250–500 °C  
1–3 h

Thermal stress relieving 150–200 °C  
1–3 h