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

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.

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
Moduls of elasticity	GPa	130

Reference values at room temperature

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

Surface treatment

Polishing mechanical	good
electrolytic	good
Electroplating	good

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.

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	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

Product standards

not standardized