

Wieland-KY6

CuMg0.1 | High copper alloy

Material designation

EN	not standardized
UNS	C15500

Chemical composition*

Cu	balance
Mg	0.1 %
P	0.06 %
Ag	0.1 %

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	46
	%IACS	80
Thermal conductivity	W/(m·K)	346
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	17.6
Density	g/cm ³	8.9
Modulus of elasticity	GPa	117

*Reference values at room temperature

Corrosion resistance

Wieland-K80 has good corrosion resistance in natural atmosphere (also marine air) and industrial atmosphere. In different waters and neutral saline solutions, it exhibits better resistance to abrasive corrosion and pitting than SF-Cu. Wieland-K80 is resistant to stress corrosion cracking.

Product standards

not standardized

Material properties and typical applications

Wieland-KY6 is a high-copper alloy containing additions of magnesium which increases mechanical strength while maintaining the high electrical conductivity of copper.

Formability of Cu-Mg alloys can be compared with unalloyed copper, whereas wear resistance and resistance at higher temperatures is improved.

The weldability and solderability of this alloy are comparable to unalloyed copper. Typical products are thin strands and wires.

Wieland-KY6 is used for the production of contacts, switching elements, connectors and cable harnesses.

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

Joining

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

Heat treatment

Melting range	1,078–1,082 °C
Hot working	760–870 °C
Soft annealing	450–200 °C 1–3 h
Thermal stress relieving	150–200 °C 1–3 h

Mechanical properties, reference values

	Tensile strength R _m MPa	Yield strength R _{p0.2} MPa	Elongation A %	Hardness HBW
Wire	280–600	240–550	45–8	75–140

Handelsmarken



Further information is provided in the brochure on Witronic.