

Wieland-FX9
CuMn15Zn15Al1
Lead free special brass

**Extruded and
drawn products**



Material designation	
EN	–
UNS	C66950

Chemical composition*	
Mn	15%
Zn	15%
Al	1%
Cu	balance

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	2.0 3.0
Thermal conductivity	W/(m·K)	15
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	21.6
Temperature coefficient of resistivity	10 ⁻³ /K	–0.01
Density	g/cm ³	8.03
Modulus of elasticity	GPA	125
Thermoelectric voltage against copper	µV/K	1.28

* Reference values at room temperature

Corrosion resistance
FX9 exhibits good resistance to fresh water, neutral or alkaline saline solutions, organic compounds, land, sea and industrial atmosphere. The material is not resistant to acids, moist sulfur compounds, moist ammonia in the non-stressrelieved condition. It is moderately susceptible to stress corrosion cracking.

Product standards
no EN standard

Material properties and typical applications

Wieland-FX9 has been developed as nickel-free alternative to nickel-silver alloys. This silver-coloured alloy has excellent cold working properties making it possible to also manufacture complex sections. Wieland-FX9 does not contain nickel and is, therefore, anti-allergenic. It has met the human ecological requirements of the German certification authority FI (Research Institute) Hohenstein, and was therefore awarded the Öko-Tex certificate. Due to its low electrical conductivity it is also highly suitable as resistance alloy in electrical engineering.

Types of delivery

The Extruded and Drawn Products Division 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		Surface treatment	
Machinability (CuZn39Pb3 = 100 %)	20 %	Polishing	
Capacity for being cold worked	excellent	mechanical	excellent
Capacity for being hot worked	poor	electrolytic	excellent
		Electroplating	excellent
Joining		Heat treatment	
Resistance welding (butt weld)	fair	Melting range	839–894 °C
Inert gas shielded arc welding	fair	Hot working	700–800 °C
Gas welding	fair	Soft annealing	500–700 °C 1–3 h
Hard soldering	poor	Thermal stress relieving	200–300 °C 1–3 h
Soft soldering	poor		

Trademark



Further information is provided in our brochures on RESISTAN and on rectangular wire for zip fasteners.

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Typical mechanical properties

Rectangular wire for zip fasteners

Temper	Tensile strength R_m MPa	Yield strength $R_{p0,2}$ MPa	Elongation at rupture A10 %	Hardness HV10
1/4 hard	approx. 500	approx. 450	approx. 15	approx. 150