

Wieland-N48

CuNi12Zn38Mn5Pb2 | Nickel silver (lead-containing)

Material designation

EN*	CW407J
UNS	not standardized

*according to CEN/TS 13388:2015

Chemical composition*

Cu	43 %
Ni	12 %
Pb	2 %
Mn	5 %
Zn	balance

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	3
	%IACS	5
Thermal conductivity	W/(m·K)	30
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	20
Density	g/cm ³	8.3
Modulus of elasticity	GPa	110

*Reference values at room temperature

Corrosion resistance

Nickel silver generally exhibits good corrosion resistance to atmospheric influences, organic substances (perspiration, environmental influences) as well as alkaline or neutral saline solutions.

Product standards

no EN standard

Material properties and typical applications

Wieland-N48 has been specially developed for ballpoint pens. It has a silvery colour and provides high tarnish and wear resistance. N48 is particularly suitable for machining, it is also suited for border crimping.

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 tempsers.

Fabrication properties

Forming

Machinability (CuZn39Pb3 = 100 %)	90 %
Capacity for being cold worked	fair
Capacity for being hot worked	good

Joining

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

Surface treatment

Polishing	
mechanical electrolytic	good poor
Electroplating	good

Heat treatment

Melting range	870–920 °C
Hot working	680–750 °C
Soft annealing	600–650 °C 1–3 h
Thermal stress relieving	300 °C 1–3 h

Trademarks

scriptoline[®]

Further information is provided in the brochure scriptoline.

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Mechanical properties

Round wire

Temper	Tensile strength R_m	Yield strength $R_{p0.2}$	Elongation %
	MPa	MPa	A100
		min.	min.
1/4 hard	> 550	approx. 400	> 25
3/4 hard	> 650	approx. 550	> 2