

# Wieland-N35

CuNi15Zn23Pb2 | Nickel silver (lead)

## Material designation

EN	not standardized
UNS	not standardized

## Chemical composition\*

Cu	61 %
Ni	15 %
Pb	2 %
Zn	balance

\* Reference values in % by weight

## Physical properties\*

Electrical conductivity	MS/m	3.5
	%IACS	6
Thermal conductivity	W/(m·K)	50
Thermal expansion coefficient (0–300 °C)		18
	$10^{-6}/K$	
Density	g/cm <sup>3</sup>	8.69
Modulus of elasticity	GPa	135

\* 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 and neutral saline solutions.

## Product standards

not standardized

## Material properties and typical applications

Wieland-N35 is a silver-coloured material especially developed for tips for ballpoint pens and is, meanwhile, used by wellknown manufacturers of writing utensils. This alloy combines good machinability with good cold working properties. Tips made out of **Wieland-N35** have a good resistance to wear and corrosion and result in a beautiful type face.

## 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 %)	70 %
Capacity for being cold worked	good
Capacity for being hot worked	poor

### Surface treatment

Polishing	
mechanical	good
elektrolytic	fair
Electroplating	good

## Joining

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

## Heat treatment

Melting range	935–1060 °C
Hot working	850–925 °C
Soft annealing	500–700 °C
	1–3 h
Thermal stress relieving	200–300 °C
	1–3 h

## Trademarks

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Further information is provided in our brochure scriptoline.