

Wieland-N39

CuNi13Zn25Pb1 | C79200

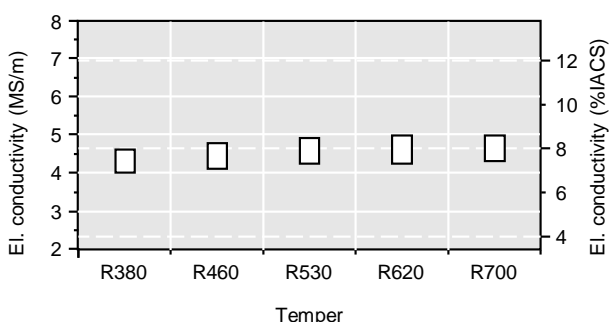
This leaded nickel silver is designed for machining operations of parts which are used in daily life, such as keys, watches and musical instrument keys. These applications require a valuable-looking surface – especially if the color is silver. In addition, this alloy has very good mechanical stability, corrosion and tarnish resistance, which allows survival in atmospheric humidity and during contact with household fluids and perspiration.

Chemical composition (Reference)		Physical properties (Reference values at room temperature)				
Cu	62 %	Electrical conductivity	4.4 MS/m	8 %IACS		
Ni	13 %	Thermal conductivity	34 W/(m·K)	20 Btu·ft/(ft ² ·h·°F)		
Pb	1 %	Coefficient of electrical resistance*	0.4 10 ⁻³ /K	0.2 10 ⁻³ /°F		
Zn	remainder	Coefficient of thermal expansion*	18.0 10 ⁻⁶ /K	10.0 10 ⁻⁶ /°F		
		Density	8.67 g/cm ³	0.313 lb/in ³		
		Modulus of elasticity	130 GPa	18,800 ksi		
		Specific heat	0.380 J/(g·K)	0.091 Btu/(lb·°F)		
		Poisson's ratio	0.34	0.34		

* Between 0 and 300 °C

Mechanical properties (values in brackets are for information only)						
Temper	Tensile strength R _m		Yield strength R _{p0.2}		Elongation A ₅₀ %	Hardness HV
	MPa	ksi	MPa	ksi		
R380	380-470	55-68	≥ 260	≥ 38	≥ 15	(110-140)
R460	460-540	67-78	≥ 320	≥ 46	≥ 6	(130-160)
R530	530-610	77-88	≥ 420	≥ 61	≥ 3	(155-185)
R620	620-700	90-102	≥ 530	≥ 77	-	(180-210)
R700	≥ 700	≥ 102	≥ 630	≥ 91	-	(≥ 200)

Electrical conductivity



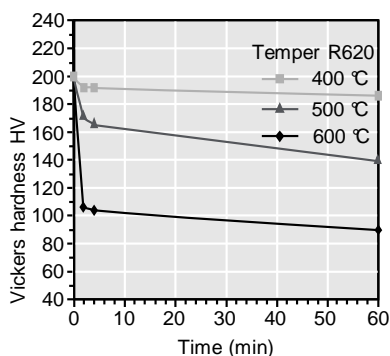
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Fatigue strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10^7 load cycles under symmetrical alternate load without breaking. It is dependent on the temper tested and is about 1/3 of the tensile strength R_m .

Resistance to softening



Vickers hardness after heat treatment (typical values)

Types and formats available

- Standard coils with outside diameters up to 1,200 mm
- Traverse-wound coils with drum weights up to 1.5 t
- Multicoil up to 5 t
- Contour-milled strip
- Sheet

Dimensions available

- Strip thickness from 0.50 mm, thinner gauges on request
- Strip width from 3 mm, however min. 10 x strip thickness

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