

CuMn15Zn15Al1

C66950

Material Designation	
EN	no EN standard
UNS*	C66950

*Unified Numbering System (USA)

Chemical Composition (Reference)	
Mn	15 %
Zn	15 %
Al	1 %
Cu	balance

Typical Applications
<ul style="list-style-type: none"> • Textile and clothing accessoires • Spectacle frames • Keys

Physical Properties*		
Electrical Conductivity	MS/m % IACS	1.8 3
Thermal Conductivity	W/ (m·K)	17
Coefficient of Electrical Resistance**	10 ⁻³ /K	-0.01
Coefficient of Thermal Expansion**	10 ⁻⁶ /K	21.6
Density	g/cm ³	8.03
Modulus of Elasticity	GPa	125
Specific Heat	J/(g·K)	0.377
Poisson's Ratio		0,34

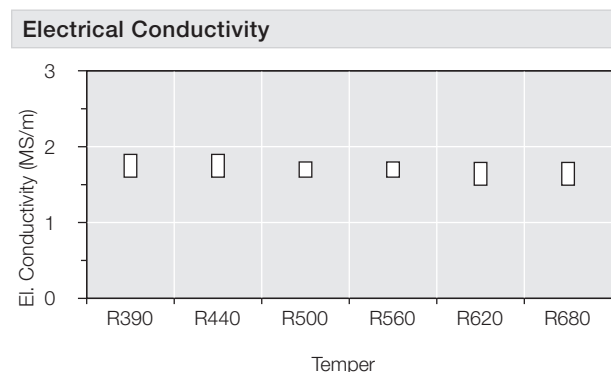
* Reference values at room temperature

** Between 0 and 300 °C

Fabrication Properties	
Capacity for Being Cold Worked	excellent
Machinability	less suitable
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	good
Soft Soldering	good
Resistance Welding	good
Gas Shielded Arc Welding	fair
Laser Welding	less suitable

Corrosion Resistance
Good resistance to: fresh water, neutral or alkaline saline solutions, organic compounds as well as land, sea, and industrial atmosphere.
Not resistant to: acids, hydrous sulphur compounds, hydrous ammonia in the non-stress-relieved condition. Lower sensivity to stress corrosion cracking than brass.

Mechanical Properties							
Temper		R390	R440	R500	R560	R620	R680
Tensile Strength R _m	MPa	390–460	440–510	500–580	560–640	620–700	≥ 680
Yield Strength R _{p0,2}	MPa	≤ 220	≥ 320	≥ 350	≥ 450	≥ 580	≥ 650
Elongation A _{50mm}	%	≥ 30	≥ 25	≥ 12	≥ 7	≥ 2	–
Hardness HV (for information only)		(80–110)	(105–135)	(130–160)	(150–180)	(175–205)	(≥ 190)

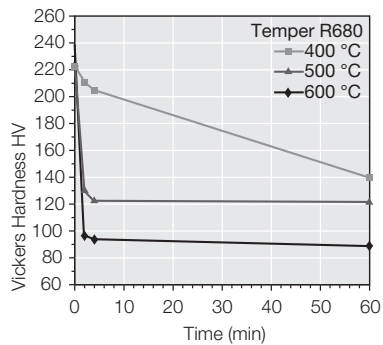


WIELAND-FX9

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Resistance to Softening



Vickers hardness after heat treatment
(typical values)

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 $\frac{1}{3}$ of the tensile strength R_m .

Types and Formats available

- Standard coils with outside diameters up to 1.400 mm
- Traverse-wound coils with drum weights up to 1.5 t
- Multicoil up to 5 t
- Hot-dip tinned strip
- Contour-milled strip
- Sheet
- Strip and sheet with protective coating

Dimensions available

- Strip thickness from 0.10 mm, thinner gauges on request
- Strip width from 3 mm, however min. 10 x strip thickness

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