

**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**

- Textile and clothing accessoires
- Spectacle frames
- Keys

**Physical Properties\***

Electrical Conductivity	MS/m	1.8
	%IACS	3
Thermal Conductivity	W/(m·K)	35
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /K	-0.01
Coefficient of Thermal Expansion**	10 <sup>-6</sup> /K	21.6
Density	g/cm <sup>3</sup>	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**

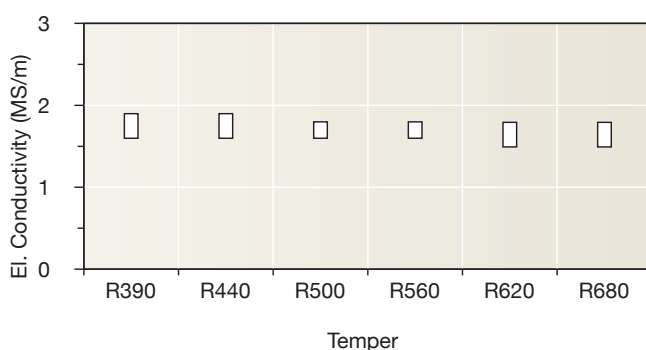
Good resistance to: fresh water, neutral or alkaline saline solutions, organic compounds as well as land, sea, and industrial atmosphere.

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 <sub>m</sub>	MPa	390–460	440–510	500–580	560–640	620–700	≥ 680
Yield Strength R <sub>p0.2</sub>	MPa	≤ 220	≥ 320	≥ 350	≥ 450	≥ 580	≥ 650
Elongation A <sub>50mm</sub>	%	≥ 30	≥ 25	≥ 12	≥ 7	≥ 2	–
Hardness HV (for information only)		(80–110)	(105–135)	(130–160)	(150–180)	(175–205)	(≥ 190)

**Electrical Conductivity**

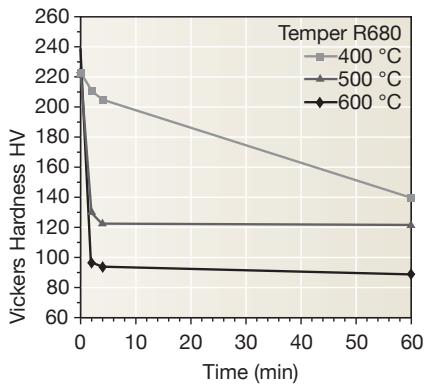


# Wieland-FX9

CuMn15Zn15Al1

C66950

## 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 1400 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