

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)	35
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

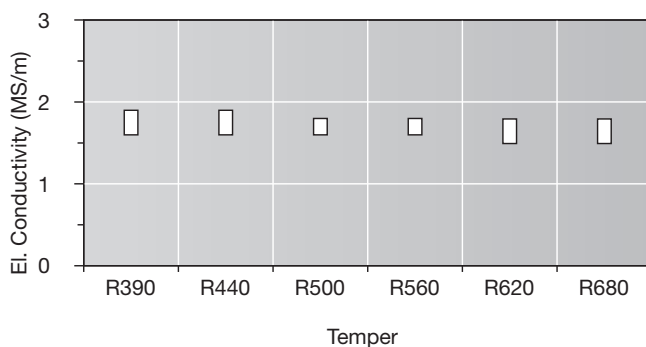
** Between 0 and 300 °C

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)

Electrical Conductivity

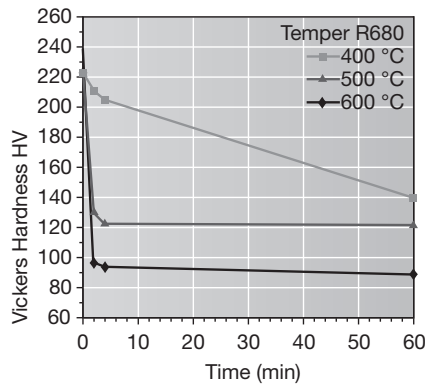


Wieland-FX9

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

Wieland-Werke AG

www.wieland.com

Rolled Products Division

Graf-Arco-Str. 36, 89079 Ulm, Germany, Phone +49 (0)731 944-0, Fax +49 (0)731 944-2772, info@wieland.de
Ziegeleiweg 20, 42555 Velbert-Langenberg, Germany, Phone +49 (0)731 944-0, Fax +49 (0)731 944-9270, info@wieland.de
Lantwattenstr. 11, 78007 Villingen-Schwenningen, Germany, Phone +49 (0)731 944-0, Fax +49 (0)731 944-7108, info@wieland.de

This leaflet is for your general information only and is not subject to revision. No claims can be derived from it unless there is evidence of intent or gross negligence. The data given are no warranty that the product is of a specified quality and they cannot replace expert advice or the customer's own tests.