

Wieland-FX9

CuMn15Zn15Al1 | C66950

Developed as a Ni-free alternative to nickel silvers, C66950 exhibits a silvery color and is typically used for parts in the textile and clothing industry that are in direct contact with the human skin. Allergic reactions on Ni are thus prevented. This alloy can be processed like a brass, including deep drawing, and it is well suitable for chemical dyeing and coloring, offering interesting options for fashion articles and spectacle frames.

Chemical composition (Reference)

Mn	15 %
Zn	15 %
Al	1 %
Cu	remainder

Physical properties (Reference values at room temperature)

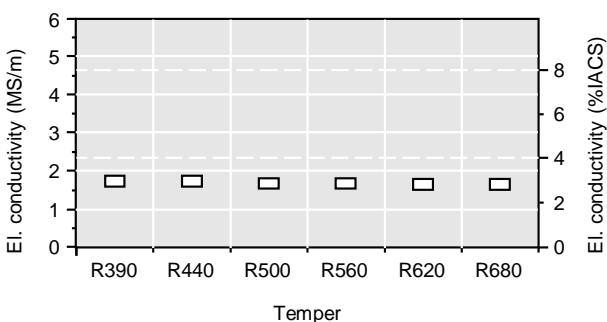
Electrical conductivity	1.8 MS/m	3 %IACS
Thermal conductivity	35 W/(m·K)	20 Btu·ft/(ft ² ·h·°F)
Coefficient of electrical resistance*	-0.01 10 ⁻³ /K	-0.006 10 ⁻³ /°F
Coefficient of thermal expansion*	21.6 10 ⁻⁶ /K	12.0 10 ⁻⁶ /°F
Density	8.03 g/cm ³	0.290 lb/in ³
Modulus of elasticity	125 GPa	18,000 ksi
Specific heat	0.377 J/(g·K)	0.090 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	%	
R390	390-460	57-67	≤ 220	≤ 32	≥ 30	(80-110)
R440	440-510	64-74	≤ 320	≤ 46	≥ 25	(105-135)
R500	500-580	73-84	≥ 350	≥ 51	≥ 12	(130-160)
R560	560-640	81-93	≥ 450	≥ 65	≥ 7	(150-180)
R620	620-700	90-102	≥ 580	≥ 84	≥ 2	(150-180)
R680	≥ 680	≥ 99	≥ 650	≥ 94	-	(≥ 190)

Electrical conductivity



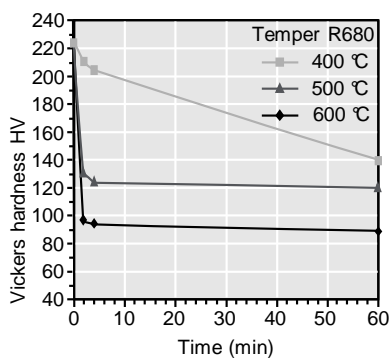
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Fatigue strength

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 .

Softening resistance



Vickers hardness after heat treatment (typical values)

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
- 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 | Graf-Arco-Straße 36 | 89079 Ulm | Germany
info@wieland.com | wieland.com

Wieland Rolled Products North America | 4803 Olympia Park Plaza, Suite 3000 | Louisville, Kentucky | USA
infona@wieland.com | wieland-rolledproductsna.com