

Material Designation	
EN	no EN standard
UNS*	C19210

* Unified Numbering System (USA)

Chemical Composition (Reference)	
Fe	0.1 %
P	0.03 %
Cu	balance

Typical Applications
• Leadframes for power transistors
• Components for the electrical industry
• Connector pins

Physical Properties*		
Electrical Conductivity	MS/m %IACS	53 91
Thermal Conductivity	W/(m·K)	350
Coefficient of Electrical Resistance**	10 ⁻³ /K	3.2
Coefficient of Thermal Expansion**	10 ⁻⁶ /K	17.0
Density	g/cm ³	8.89
Modulus of Elasticity	GPa	130
Specific Heat	J/(g·K)	0.385
Poisson's Ratio		0.34

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

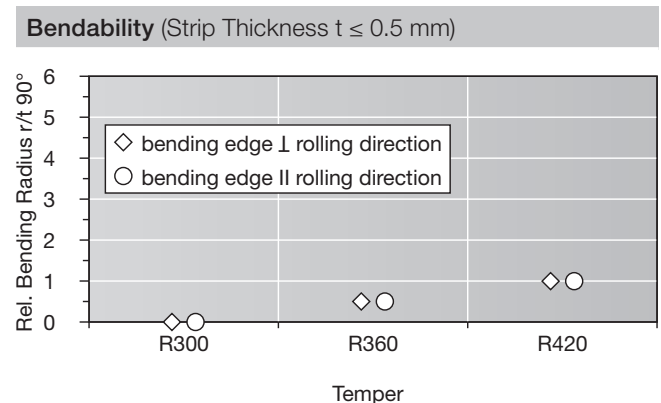
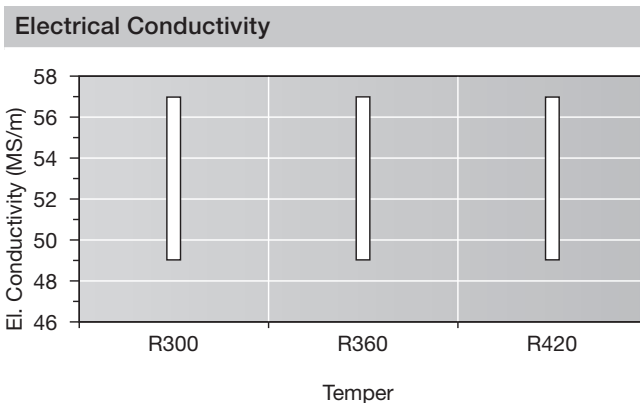
Corrosion Resistance

Wieland-K80® has good corrosion resistance in natural atmosphere (also sea air) and industrial atmosphere. In different waters and neutral saline solutions, it exhibits better resistance to abrasive corrosion and pitting than SF-Cu. Wieland-K80® is insensitive to stress corrosion cracking.

* Reference values at room temperature
** Between 0 and 300 °C

Mechanical Properties				
Temper		R300	R360	R420
Tensile Strength R _m	MPa	300–380	360–440	420–500
Yield Strength R _{p0.2}	MPa	≤ 300	≥ 260	≥ 350
Elongation A _{50mm}	%	≥ 10	≥ 3	≥ 2
Hardness HV (for information only)		(80–110)	(100–130)	(120–150)

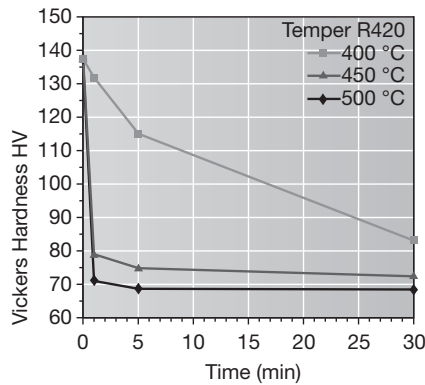
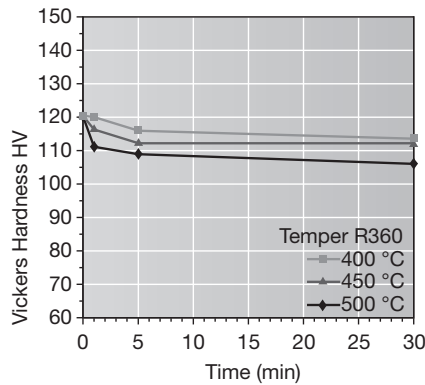
Intermediate tempers are feasible. Higher elongation values can be obtained by additional heat treatments.



Wieland-K80®

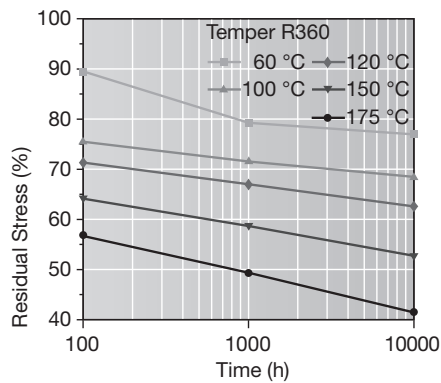
CuFeP
C19210

Resistance to Softening



Vickers hardness after heat treatment (typical values)

Stress Relaxation



Stress remaining as a function of service temperature and time. Measured on rolled-to-temper specimens parallel to rolling direction. Values extrapolated according to F. R. Larson, J. Miller, Trans ASME74 (1952) 765-775. Total stress relaxation depends on the applied stress level.

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
- Hot-dip tinned strip
- Contour-milled strip

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.