

Material Designation	
EN	no EN standard
UNS*	C18070

* Unified Numbering System (USA)

Chemical Composition (Reference)	
Cr	0.3 %
Ti	0.1 %
Si	0.02 %
Cu	balance

Typical Applications
• Components for the electrical industry
• Stamped parts
• Connectors
• Relay springs
• Semiconductor components

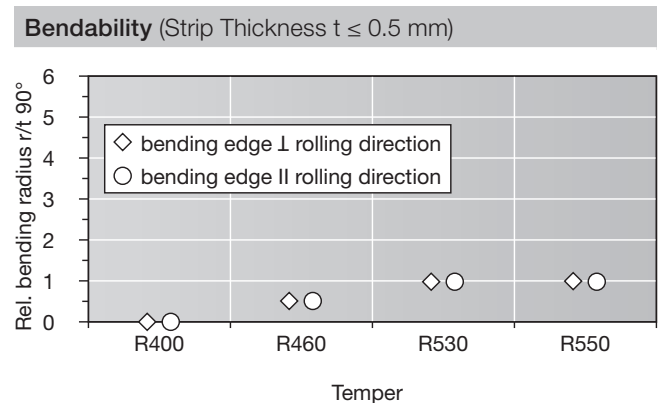
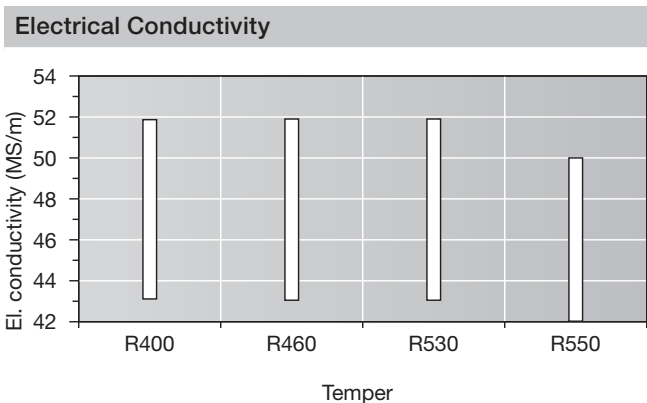
Physical Properties*		
Electrical Conductivity	MS/m %IACS	45 78
Thermal Conductivity	W/(m·K)	310
Coefficient of Electrical Resistance**	10 ⁻³ /K	3.0
Coefficient of Thermal Expansion**	10 ⁻⁶ /K	18.0
Density	g/cm ³	8.88
Modulus of Elasticity	GPa	138
Specific Heat	J/(g·K)	0.385
Poisson's Ratio		0.34

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

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

Corrosion Resistance
Wieland-K75® is resistant to pure water vapour and non oxidizing acids and alkalis as well as neutral saline solutions. The material is insensitive to stress corrosion cracking.

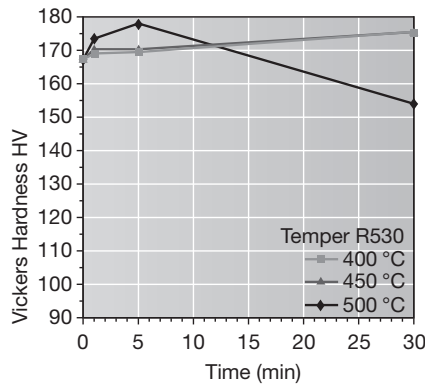
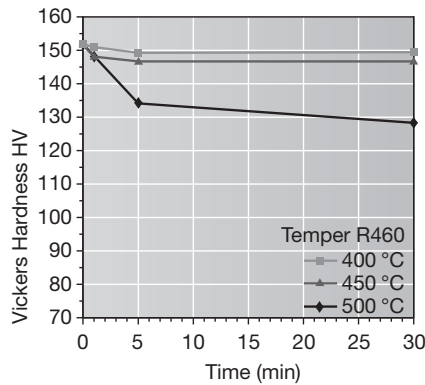
Mechanical Properties					
Temper		R400	R460	R530	R550
Tensile Strength R _m	MPa	400–480	460–540	530–610	550–630
Yield Strength R _{p0.2}	MPa	≥ 300	≥ 370	≥ 460	≥ 520
Elongation A _{50mm}	%	≥ 8	≥ 5	≥ 2	≥ 7
Hardness HV (for information only)		(120–150)	(140–170)	(150–190)	(150–190)



Wieland-K75®

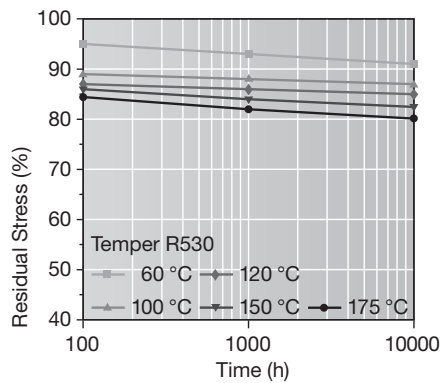
CuCrSiTi
C18070

Resistance to Softening



Vickers hardness
after heat treatment
(typical values)

Stress Relaxation



Stress remaining as a function
of service temperature and time.
Measured on stress relief annealed
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
- 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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Rolled Products Division

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