C75200

CuNi18Zn17

The nickel silver C75200 is an excellent choice for designers considering both functional and decorative applications. Offering a combination of strength, ductility and moderately high work-hardening rate, C75200 is widely used as both a deep drawing and spring alloy. Due to the high Ni content C75200 has similar appearance to stainless steel which makes it valuable for applications including costume jewelry, flatware, nameplates, and zippers.

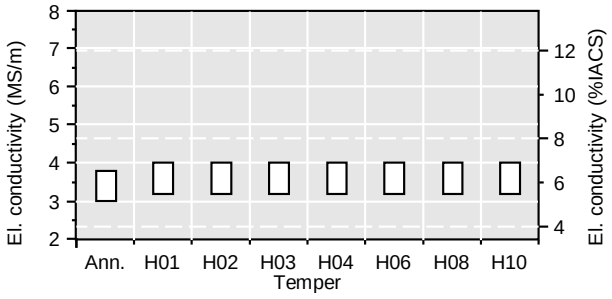
Chemical composition (Reference)	
Cu	65 %
Ni	18 %
Zn	remainder

Physical properties (Reference values at room temperature)				
Electrical conductivity	3.5	MS/m	6	%IACS
Thermal conductivity	33	W/(m·K)	19	Btu·ft/(ft²·h·℉)
Coefficient of electrical resistance*	0.2	10^{-3}/K	0.1	10^{-3}/℉
Coefficient of thermal expansion*	16.2	10^{-6}/K	9.0	10^{-6}/℉
Density	8.73	g/cm³	0.316	lb/in³
Modulus of elasticity	124	GPa	18,000	ksi
Specific heat	0.380	J/(g·K)	0.091	Btu/(lb·℉)
Poisson´s ratio	0.34		0.34	

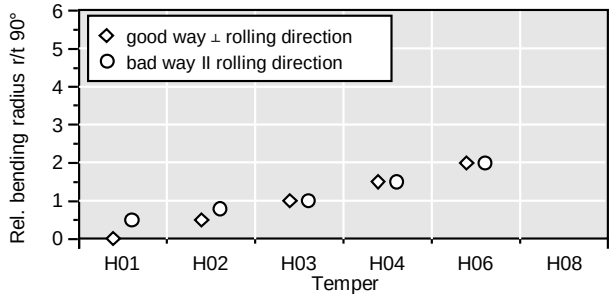
* Between 0 and 300 ℃

Mechanical properties (values in brackets are for information only)					
Temper	**Tensile strength R_m**		**Yield strength $R_{p0.2}$**		**Elongation A_{50} / $A_{2"}$**
	MPa	**ksi**	**MPa**	**ksi**	**%**
Annealed	365-435	53-63	≥ 125	≥ 18	≥ 29
H01	400-495	58-72	≥ 180	≥ 26	≥ 14
H02	455-550	66-80	≥ 330	≥ 48	≥ 6
H03	510-595	74-86	≥ 475	≥ 69	≥ 4
H04	540-625	78-91	≥ 515	≥ 75	≥ 3
H06	595-675	86-98	≥ 585	≥ 85	≥ 3
H08	620-695	90-101	≥ 605	≥ 88	≥ 1
H10	≥ 660	≥ 96	≥ 655	≥ 95	≥ 1

Electrical conductivity



Bendability* (Strip thickness t ≤ 0.4 mm)



* Typical 90° bend formability. Data for reference only.

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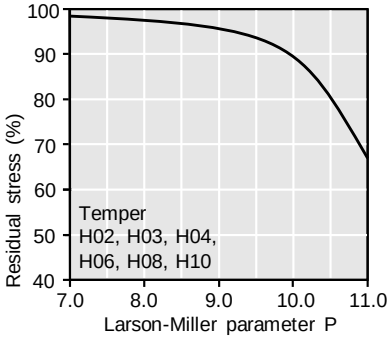
Thermal stress relaxation



Stress remaining after thermal relaxation as a function of Larson-Miller parameter P
(F. R. Larson, J. Miller, Trans ASME74 (1952) 765–775) given by:
P = (20 + log(t))*(T + 273)*0.001.
Time t in hours, temperature T in ℃.
Example: P = 9 is equivalent to 1,000 h/118 ℃.
Measured on stress relief annealed specimens parallel to rolling direction.
Total stress relaxation depends on the applied stress level. Furthermore, it is increased to some extent by cold deformation.

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.

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
- 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 | 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

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