Specification Sheet

Last Modified: May 27, 2017

C76200

Nickel Silver

Chemical Composition

(%max., unless shown as range or min.)

	Cu[1]	Fe	Pb	Mn	Ni[2]	Zn
Min./Max.	57.0-61.0	0.25	0.09	0.5	11.0-13.5	Rem.
Nominal	59	-	-	-	12.2	28.5

(1) Cu value includes Ag.
(2) Ni value includes Co.
Note: Cu + Sum of Named Elements, 99.5% min.

Applicable Specifications

Product	Specification
Bar	ASTM B122
Plate	ASTM B122
Sheet	ASTM B122
Strip	ASTM B122, B888

Common Fabrication Processes

No information available.

Millard Wire & Specialty Strip Co.

449 Warwick Industrial Drive • Warwick, RI 02886

Phone: (401) 737-9330 • Fax: (401) 737-9340

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Not Recommended
Spot Weld	Good
Seam Weld	Fair
Butt Weld	Good
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Poor
Machinability Rating	20

Thermal Properties

Treatment	Temp./Time – US	Temp./Time – SI
Stress Temperature		
Solution Minimum		
Solution Maximum		
Solution Time		
Solution Medium	None	
Precipitation Value		
Precipitation Time		
Precipitation Medium	None	
Annealing Minimum	1000	538
Annealing Maximum	1350	733
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		

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Mechanical Properties (Measured at Room Temperature, 68°F (20°C))

Temper	Section Size	Cold Work	Typ/Min	Temp	Tensile Strength	Yield Strength (0.5% ext. under load)	Yield Strength (0.2% offset)	Yield Strength (0.05% offset)	El	Rockwell Hardness				Vickens Hardness	Brinell Hardness		Shear Strength	Fatigue Strength	Izod Impact Strength
	in.	%		F	ksi	ksi	ksi	ksi	%	B	C	F	30T	500	500	3000	ksi	ksi	ft-lb
	mm.			C	MPa	MPa	MPa	MPa									MPa	MPa	J
Flat Products																			
H10	0	0	TYP	68	119	-	116	-	1	-	-	-	-	-	-	-	-	-	0
	0			20	820	-	800	-	1	-	-	-	-	-	-	-	-	-	0
H08	0	0	TYP	68	115	-	111	-	1	-	-	-	-	-	-	-	-	-	0
	0			20	793	-	765	-	1	-	-	-	-	-	-	-	-	-	0
H04	0	0	TYP	68	98	-	90	-	2	-	-	-	-	-	-	-	-	-	0
	0			20	676	-	620	-	2	-	-	-	-	-	-	-	-	-	0
H02	0	0	TYP	68	83	-	70	-	17	-	-	-	-	-	-	-	-	-	0
	0			20	572	-	483	-	17	-	-	-	-	-	-	-	-	-	0
H06	0	0	TYP	68	108	-	102	-	2	-	-	-	-	-	-	-	-	-	0
	0			20	745	-	703	-	2	-	-	-	-	-	-	-	-	-	0
OS015	0	0	TYP	68	62	-	35	-	40	-	-	-	-	-	-	-	-	-	0
	0			20	427	-	241	-	40	-	-	-	-	-	-	-	-	-	0
OS035	0	0	TYP	68	57	-	32	-	41	-	-	-	-	-	-	-	-	-	0
	0			20	393	-	221	-	41	-	-	-	-	-	-	-	-	-	0
OS050	0	0	TYP	68	55	-	30	-	42	-	-	-	-	-	-	-	-	-	0
	0			20	379	-	207	-	42	-	-	-	-	-	-	-	-	-	0

*Fatigue Strength: 100 x 10^6 cycles, unless indicated as [N]X 10^6.

Physical Properties

Property	US Customary	Metric
Melting Point - Liquidus	1880 F	1025 C
Melting Point - Solidus	1800 F	980 C
Density	0.310 lb/in^3 at 68 F	8.58 gm/cm^3 @ 20 C
Specific Gravity	8.58	8.58
Electrical Resistivity	115 ohms-cmil/ft @ 68 F	19.2 microhm-cm @ 20 C
Electrical Conductivity	9 %IACS @ 68 F	0.052 MegaSiemens/cm @ 20 C
Thermal Conductivity	26 Btu · ft/(hr · ft2·oF)at 68F	45.0 W/m · °K at 20 C
Coefficient of Thermal Expansion	9 ·10^{-6} per °F (68-572 F)	16.2 ·10^{-6} per °C (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/°F at 68 F	377.1 J/kg · °K at 293 K
Modulas of Elasticity in Tension	18000 ksi	124100 MPa
Modulus of Rigidity	6800 ksi	46880 MPa

Tempers Most Commonly Used

Information not available.

Typical Uses

Electrical

Springs for Relays, Rheostats

Industrial

Condensers

Casting Characteristics

No casting characteristics for this alloy.