



C74500

Nickel Silver, 65-10

Chemical Composition

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

	Cu ⁽¹⁾	Fe	Pb ⁽²⁾	Mn	Ni ⁽³⁾	Zn
Min./Max.	63.5-66.5	0.25	0.09	0.5	9.0-11.0	Rem.
Nominal	65	-	-	-	10	25

(1) Cu value includes Ag.

(2) .05% Pb, max., for rod, wire, and tube.

(3) Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.5% min.

Applicable Specifications

Product	Specification
Bar	ASTM B122, B151
Plate	ASTM B122
Rod	ASTM B151
Sheet	ASTM B122
Strip	ASTM B122
Wire	ASTM B206

Common Fabrication Processes

Blanking, Drawing, Etching, Forming and Bending, Heading and Upsetting, Roll Threading and Knurling, Shearing and Spinning, Squeezing and Swaging

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	1100	594
Annealing Maximum	1400	761
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		



C74500 Specification Sheet

Mechanical Properties

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

	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)	EI	Rockwell Hardness				Vickers Hardness	Brinell Hardness	Shear Strength	Fatigue Strength	Izod Impact Strength	
	in. mm.	%		F C	ksi MPa	ksi MPa	ksi MPa	ksi MPa	%	B	C	F	30T	500	500	3000	ksi MPa	ksi MPa	ft-lb J
Wire																			
H04	0.08	37	TYP	68	85	-	-	-	7	-	-	-	-	-	-	-	-	-	0
	2			20	586	-	-	-	7	-	-	-	-	-	-	-	-	-	0
OS070	0.08	0	TYP	68	50	-	-	-	50	-	-	-	-	-	-	-	-	-	0
	2			20	345	-	-	-	50	-	-	-	-	-	-	-	-	-	0
Flat Products																			
H02	0.04	0	TYP	68	73	60	-	-	12	80	-	-	70	-	-	-	50	-	0
	1			20	503	414	-	-	12	80	-	-	70	-	-	-	345	-	0
OS015	0.04	0	TYP	68	60	28	-	-	36	52	-	85	51	-	-	-	-	-	0
	1			20	414	193	-	-	36	52	-	85	51	-	-	-	-	-	0
Wire																			
H04	0.08	10	TYP	68	65	-	-	-	25	-	-	-	-	-	-	-	-	-	0
	2			20	448	-	-	-	25	-	-	-	-	-	-	-	-	-	0
Flat Products																			
H06	0.04	0	TYP	68	95	76	-	-	3	92	-	-	78	-	-	-	59	-	0
	1			20	655	524	-	-	3	92	-	-	78	-	-	-	407	-	0
OS035	0.04	0	TYP	68	53	20	-	-	43	35	-	76	38	-	-	-	41	-	0
	1			20	365	138	-	-	43	35	-	76	38	-	-	-	283	-	0
Wire																			
H04	0.08	20	TYP	68	72	-	-	-	10	-	-	-	-	-	-	-	-	-	0
	2			20	496	-	-	-	10	-	-	-	-	-	-	-	-	-	0
Flat Products																			
H04	0.04	0	TYP	68	86	75	-	-	4	89	-	-	76	-	-	-	55	-	0
	1			20	593	517	-	-	4	89	-	-	76	-	-	-	379	-	0
Wire																			
OS050	0.08	0	TYP	68	52	-	-	-	48	-	-	-	-	-	-	-	-	-	0
	2			20	359	-	-	-	48	-	-	-	-	-	-	-	-	-	0
OS015	0.08	0	TYP	68	63	-	-	-	35	-	-	-	-	-	-	-	-	-	0
	2			20	434	-	-	-	35	-	-	-	-	-	-	-	-	-	0
H04	0.08	60	TYP	68	105	-	-	-	5	-	-	-	-	-	-	-	-	-	0
	2			20	724	-	-	-	5	-	-	-	-	-	-	-	-	-	0
Flat Products																			
OS070	0.04	0	TYP	68	49	18	-	-	49	22	-	67	30	-	-	-	-	-	0
	1			20	338	124	-	-	49	22	-	67	30	-	-	-	-	-	0
Wire																			
H04	0.08	84	TYP	68	130	-	-	-	1	-	-	-	-	-	-	-	-	-	0
	2			20	896	-	-	-	1	-	-	-	-	-	-	-	-	-	0
H04	0.08	75	TYP	68	120	-	-	-	3	-	-	-	-	-	-	-	-	-	0
	2			20	827	-	-	-	3	-	-	-	-	-	-	-	-	-	0
OS035	0.08	0	TYP	68	56	-	-	-	45	-	-	-	-	-	-	-	-	-	0
	2			20	386	-	-	-	45	-	-	-	-	-	-	-	-	-	0
Flat Products																			
OS050	0.04	0	TYP	68	51	19	-	-	46	28	-	71	34	-	-	-	-	-	0
	1			20	352	131	-	-	46	28	-	71	34	-	-	-	-	-	0
Wire																			
OS025	0.08	0	TYP	68	58	-	-	-	40	-	-	-	-	-	-	-	-	-	0
	2			20	400	-	-	-	40	-	-	-	-	-	-	-	-	-	0
Wire																			
H01	0.04	0	TYP	68	65	45	25	-	-	63	-	70	45	-	-	-	-	-	0
	1			20	448	310	172	-	-	63	-	70	45	-	-	-	-	-	0
H00	0.04	0	TYP	68	60	35	-	-	34	60	-	-	55	-	-	-	43	-	0
	1			20	414	241	-	-	34	60	-	-	55	-	-	-	296	-	0
OS025	0.04	0	TYP	68	56	23	-	-	40	42	-	80	44	-	-	-	-	-	0
	1			20	386	159	-	-	40	42	-	80	44	-	-	-	-	-	0

*Fatigue Strength: 100 x 10⁶ cycles, unless indicated as [N]X 10⁶.

Physical Properties

Property	US Customary	Metric
Melting Point - Liquidus	1870° F	1021° C
Density	0.314 lb/in ³ at 68° F	8.69 gm/cm ³ @ 20° C
Specific Gravity	8.69	8.69
Electrical Resistivity	115 ohms-cmil/ft @ 68° F	19.12 microhm-cm @ 20° C
Electrical Conductivity	9 %IACS @ 68° F	0.053 MegaSiemens/cm @ 20° C
Thermal Conductivity	26 Btu·ft/(hr·ft ² ·°F) at 68°F	45.0 W/m·°K at 20° C
Coefficient of Thermal Expansion	9.10·10 ⁻⁶ per °F (68-572° F)	16.4·10 ⁻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
Modulus of Elasticity in Tension	17500 ksi	121000 MPa
Modulus of Rigidity	6600 ksi	45510 MPa

Tempers Most Commonly Used

Flat Products	
BAR, ROLLED	OS050
STRIP, ROLLED	H00, H01, H02, H04, H06, OS015, OS025, OS035, OS050, OS070
WIRE, ROLLED	H00, H01, H02, H04

Other	
WIRE	H00, H01, H02, H04, H06, H08, OS015, OS025, OS035, OS050, OS070

Typical Uses

Consumer

Name Plates, Hollow Ware

Electrical

Connectors

Fasteners

Screws, Slide Fasteners, Rivets

Industrial

Etching Stock, Platers Bar, Optical Parts

Casting Characteristics

No casting characteristics available for this alloy.