



C75700

Nickel Silver, 65-12

Chemical Composition

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

	Cu(1)	Fe	Pb	Mn	Ni(2)	Zn
Min./Max.	63.5-66.5	0.25	0.05	0.5	11.0-13.0	Rem.
Nominal	65	-	-	-	12	23

(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 B151
Rod	ASTM B151
Wire	ASTM B206

Common Fabrication Processes

Blanking, Drawing, Etching, Forming and Bending, Heading and Upsetting, Roll Threading and Knurling, Shearing, 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	1500	816
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		



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
Flat Products																			
OS015	0.04	0	TYP	68	61	28	-	-	35	55	-	88	51	-	-	-	-	-	0
	1			20	421	193	-	-	35	55	-	88	51	-	-	-	-	-	0
H02	0.04	0	TYP	68	73	60	-	-	11	80	-	-	70	-	-	-	47	-	0
	1			20	503	414	-	-	11	80	-	-	70	-	-	-	324	-	0
OS035	0.04	0	TYP	68	56	21	-	-	42	37	-	78	38	-	-	-	41	-	0
	1			20	386	145	-	-	42	37	-	78	38	-	-	-	283	-	0
H06	0.04	0	TYP	68	93	79	-	-	2	92	-	-	77	-	-	-	56	-	0
	1			20	641	545	-	-	2	92	-	-	77	-	-	-	386	-	0
H04	0.04	0	TYP	68	85	75	-	-	4	89	-	-	75	-	-	-	52	-	0
	1			20	586	517	-	-	4	89	-	-	75	-	-	-	359	-	0
OS070	0.04	0	TYP	68	52	18	-	-	48	22	-	69	27	-	-	-	-	-	0
	1			20	359	124	-	-	48	22	-	69	27	-	-	-	-	-	0
OS050	0.04	0	TYP	68	54	19	-	-	45	30	-	73	33	-	-	-	-	-	0
	1			20	372	131	-	-	45	30	-	73	33	-	-	-	-	-	0
OS025	0.04	0	TYP	68	59	24	-	-	38	45	-	82	44	-	-	-	-	-	0
	1			20	407	165	-	-	38	45	-	82	44	-	-	-	-	-	0
H01	0.04	0	TYP	68	65	45	-	-	23	70	-	-	63	-	-	-	44	-	0
	1			20	448	310	-	-	23	70	-	-	63	-	-	-	303	-	0
H00	0.04	0	TYP	68	60	35	-	-	32	60	-	-	55	-	-	-	43	-	0
	1			20	414	241	-	-	32	60	-	-	55	-	-	-	296	-	0

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

Physical Properties

Property	US Customary	Metric
Melting Point - Liquidus	1900 F	1038 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	130 ohms-cmil/ft @ 68 F	21.61 microhm-cm @ 20 C
Electrical Conductivity	8 %IACS @ 68 F	0.047 MegaSiemens/cm @ 20 C
Thermal Conductivity	23 Btu · ft/(hr · ft ² · oF) at 68F	39.8 W/m · oK at 20 C
Coefficient of Thermal Expansion	9 · 10 ⁻⁶ per oF (68-572 F)	16.2 · 10 ⁻⁶ per oC (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/oF at 68 F	377.1 J/kg · oK at 293 K
Modulus of Elasticity in Tension	18000 ksi	124000 MPa
Modulus of Rigidity		

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, OS015, OS025, OS035, OS050, OS070

Typical Uses

Consumer

Camera Parts, Name Plates

Fasteners

Slide Fasteners

Industrial

Etching Stock, Optical Parts

Casting Characteristics

No casting characteristics available for this alloy.