



C42200

Chemical Composition

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

	Cu	Fe	Pb	P	Sn	Zn
Min./Max.	86.0-89.0	0.05	0.05	0.35	.8-1.4	Rem.
Nominal	87.5	-	-	-	1.1	11.4

Note: Cu + Sum of Named Elements, 99.7% min.

Applicable Specifications

Product	Specification
Bar, Rolled	ASTM B591
Plate	ASTM B591
Sheet	ASTM B591
Strip	ASTM B888, B591

Common Fabrication Processes

Blanking, Drawing, Forming, Piercing and Punching

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Fair
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Excellent
Spot Weld	Good
Seam Weld	Fair
Butt Weld	Good
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Good
Machinability Rating	30

Millard Wire & Specialty Strip Co.

449 Warwick Industrial Drive • Warwick, RI 02886

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



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	930	499
Annealing Maximum	1250	677
Annealing Time		
Hot Works Minimum	1525	830
Hot Works Maximum	1635	891

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)	EI	Rockwell Hardness				Vickers Hardness	Brinell Hardness			Shear Strength	Fatigue Strength	Izod Impact Strength
										B	C	F	30T		500	500	3000			
	in.	%		F	ksi	ksi	ksi	ksi	%											
	mm.			C	MPa	MPa	MPa	MPa												
Flat Products																				
OS015	0.04	0	TYP	68	46	17	19	-	44	-	-	75	40	-	-	-	-	-	0	
	1			20	317	117	131	-	44	-	-	75	40	-	-	-	-	-	0	
H02	0.04	0	TYP	68	60	51	57	-	12	70	-	-	64	-	-	-	-	-	0	
	1			20	414	352	393	-	12	70	-	-	64	-	-	-	-	-	0	
OS035	0.04	0	TYP	68	43	15	14	-	46	-	-	65	27	-	-	-	-	-	0	
	1			20	296	103	97	-	46	-	-	65	27	-	-	-	-	-	0	
H06	0.04	0	TYP	68	80	68	76	-	3	84	-	-	72	-	-	-	-	-	0	
	1			20	552	469	524	-	3	84	-	-	72	-	-	-	-	-	0	
H03	0.04	0	TYP	68	66	55	64	-	6	77	-	-	68	-	-	-	-	-	0	
	1			20	455	379	441	-	6	77	-	-	68	-	-	-	-	-	0	
H04	0.04	0	TYP	68	73	65	70	-	4	81	-	-	70	-	-	-	-	-	0	
	1			20	503	448	483	-	4	81	-	-	70	-	-	-	-	-	0	
H08	0.04	0	TYP	68	87	73	81	-	2	87	-	-	73	-	-	-	-	-	0	
	1			20	600	503	558	-	2	87	-	-	73	-	-	-	-	-	0	
OS025	0.04	0	TYP	68	44	16	15	-	45	-	-	70	31	-	-	-	-	-	0	
	1			20	303	110	103	-	45	-	-	70	31	-	-	-	-	-	0	
H10	0.04	0	TYP	68	88	75	84	-	2	86	-	-	74	-	-	-	-	-	0	
	1			20	607	517	579	-	2	86	-	-	74	-	-	-	-	-	0	
H01	0.04	0	TYP	68	52	40	39	-	30	56	-	-	54	-	-	-	-	-	0	
	1			20	359	276	269	-	30	56	-	-	54	-	-	-	-	-	0	

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



Physical Properties

Property	US Customary	Metric
Melting Point - Liquidus	1905 F	1041 C
Melting Point - Solidus	1870 F	1021 C
Density	0.318 lb/in ³ at 68 F	8.8 gm/cm ³ @ 20 C
Specific Gravity	8.8	8.8
Electrical Resistivity	33 ohms-cmil/ft @ 68 F	5.49 microhm-cm @ 20 C
Electrical Conductivity*	31 %IACS @ 68 F	0.181 MegaSiemens/cm @ 20 C
Thermal Conductivity	75 Btu · ft/(hr · ft ² · °F) at 68F	129.8 W/m · °K at 20 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*	18000 ksi	124000 MPa

*To achieve a conductivity of 31% IACS, phosphorus shall be .07% maximum.

**For annealed alloys.

Tempers Most Commonly Used

Flat Products	
BAR, ROLLED	H02, H03, H04
SHEET	H01, H02, H03, H04, H06, H08, H10, OS015, OS025, OS035
STRIP, ROLLED	H01, H02, H03, H04, H06, H08, H10, OS015, OS025, OS035

Typical Uses

Electrical

Electrical Connectors, Terminals, Connectors, Fuse Clips

Fasteners

Spring Washers

Industrial

Contact Springs, Sash Chain, Bushings

Casting Characteristics

No casting characteristics for this alloy.