



Specification Sheet

Last Modified: May 27, 2017

C34000

Medium Leaded Brass, 64-1/2%

Chemical Composition

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

	Cu	Fe ⁽¹⁾	Pb	Zn
Min./Max.	62.0-65.0	0.15	.8-1.5	Rem.
Nominal	63.5	-	1	35.5

(1) For flat products, the iron shall be .10% max.

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

Applicable Specifications

Product	Specification
Bar	ASTM B121
Plate	ASTM B121
Rod	ASTM B453
Sheet	ASTM B121
Strip	ASTM B121

Common Fabrication Processes

Blanking, Heading and Upsetting, Machining, Piercing and Punching, Roll Threading and Knurling, Stamping

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	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Spot Weld	Not Recommended
Seam Weld	Not Recommended
Butt Weld	Fair
Capacity for Being Cold Worked	Good
Capacity for Being Hot Formed	Poor
Machinability Rating	70

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	800	427
Annealing Maximum	1200	649
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)	EI	Rockwell Hardness				Vickers Hardness	Brinell Hardness			Shear Strength	Fatigue Strength	Izod Impact Strength
					ksi	ksi	ksi	ksi		%	B	C	F	30T	500	500	3000	ksi	ksi	ft-lb
	in. mm.	%		F C	ksi MPa	ksi MPa	ksi MPa	ksi MPa												
Rod																				
O60	<0.50	0	SMIN	68	46	16	-	-	20	-	-	-	-	-	-	-	-	-	-	0
	<12.7			20	317	110	-	-	20	-	-	-	-	-	-	-	-	-	-	0
Flat Products																				
H02	0.04	0	TYP	68	61	50	-	-	21	70	-	-	65	-	-	-	40	-	0	
	1			20	421	345	-	-	21	70	-	-	65	-	-	-	276	-	0	
Rod																				
H01	<0.50	0	SMIN	68	52	25	-	-	10	-	-	-	-	-	-	-	-	-	0	
	<12.7			20	358	172	-	-	10	-	-	-	-	-	-	-	-	-	0	
O60	1.375	0	SMIN	68	40	15	-	-	30	-	-	-	-	-	-	-	-	-	0	
	34.9			20	276	103	-	-	30	-	-	-	-	-	-	-	-	-	0	
Wire																				
OS025	0.08	0	TYP	68	50	-	-	-	60	-	-	-	-	-	-	-	34	-	0	
	2			20	345	-	-	-	60	-	-	-	-	-	-	-	234	-	0	
Flat Products																				
OS035	0.04	0	TYP	68	49	17	-	-	54	-	-	68	31	-	-	-	34	-	0	
	1			20	338	117	-	-	54	-	-	68	31	-	-	-	234	-	0	
Rod																				
OS025	1	0	TYP	68	50	19	-	-	60	-	-	70	-	-	-	-	34	-	0	
	25.4			20	345	131	-	-	60	-	-	70	-	-	-	-	234	-	0	
H02	<0.50	0	SMIN	68	57	25	-	-	7	-	-	-	-	-	-	-	-	-	0	
	<12.7			20	393	172	-	-	7	-	-	-	-	-	-	-	-	-	0	
Flat Products																				
H04	0.04	0	TYP	68	74	60	-	-	7	80	-	-	69	-	-	-	43	-	0	
	1			20	510	414	-	-	7	80	-	-	69	-	-	-	296	-	0	
Rod																				
H01	0.75	0	SMAX	68	62	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	19.1			20	427	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
H01	1.375	10	SMAX	68	62	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	34.9			20	427	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
H01	1.375	10	SMIN	68	42	15	-	-	20	-	-	-	-	-	-	-	-	-	0	
	34.9			20	290	103	-	-	20	-	-	-	-	-	-	-	-	-	0	
H02	<0.50	0	SMAX	68	80	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	<12.7			20	552	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
H01	<0.50	0	SMAX	68	65	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	<12.7			20	448	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Wire																				
H00	0.08	0	TYP	68	58	-	-	-	45	-	-	-	-	-	-	-	38	-	0	
	2			20	400	-	-	-	45	-	-	-	-	-	-	-	262	-	0	
Rod																				
H01	1.375	10	TYP	68	-	-	-	-	-	60	-	-	-	-	-	-	36	-	0	
	34.9			20	-	-	-	-	-	60	-	-	-	-	-	-	248	-	0	
H02	1.375	0	SMIN	68	50	20	-	-	15	-	-	-	-	-	-	-	-	-	0	
	34.9			20	345	138	-	-	15	-	-	-	-	-	-	-	-	-	0	
H02	0.75	0	SMAX	68	70	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	19.1			20	483	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Wire																				
H02	0.08	0	TYP	68	88	-	-	-	15	-	-	-	-	-	-	-	46	-	0	
	2			20	607	-	-	-	15	-	-	-	-	-	-	-	317	-	0	
Rod																				
H02	0.75	0	SMIN	68	55	25	-	-	10	-	-	-	-	-	-	-	-	-	0	
	19.1			20	378	172	-	-	10	-	-	-	-	-	-	-	-	-	0	
H01	0.75	0	SMIN	68	50	20	-	-	15	-	-	-	-	-	-	-	-	-	0	
	19.1			20	345	138	-	-	15	-	-	-	-	-	-	-	-	-	0	

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



Mechanical Properties (cont'd)

Temper	Section Size	Cold Work	Typ/Min	Temp	Tensile Strength		Yield Strength (0.5% ext. under load)		Yield Strength (0.05% offset)		EI	Rockwell Hardness				Vickers Hardness	Brinell Hardness			Shear Strength	Fatigue Strength	Izod Impact Strength
					F	ksi	ksi	ksi	ksi	%		B	C	F	30T		500	500	3000			
	in.	%		F	ksi	ksi	ksi	ksi	ksi	%												
	mm.			C	MPa	MPa	MPa	MPa	MPa													
Flat Products																						
OS050	0.04	0	TYP	68	47	15	-	-	60	-	-	64	26	-	-	-	-	-	-	-	-	0
	1			20	324	103	-	-	60	-	-	64	26	-	-	-	-	-	-	-	-	0
Rod																						
H02	1.375	0	SMAX	68	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	34.9			20	427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
O60	0.75	0	SMIN	68	44	15	-	-	25	-	-	-	-	-	-	-	-	-	-	-	-	0
	19.1			20	303	103	-	-	25	-	-	-	-	-	-	-	-	-	-	-	-	0
Flat Products																						
OS025	0.04	0	TYP	68	51	19	-	-	53	-	-	72	36	-	-	-	-	-	-	-	-	0
	1			20	352	131	-	-	53	-	-	72	36	-	-	-	-	-	-	-	-	0
H01	0.04	0	TYP	68	54	40	-	-	41	55	-	-	54	-	-	-	-	-	-	36	-	0
	1			20	372	276	-	-	41	55	-	-	54	-	-	-	-	-	-	248	-	0

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

Physical Properties

Property	US Customary	Metric
Melting Point - Liquidus	1700 F	927 C
Melting Point - Solidus	1630 F	888 C
Density	0.306 lb/in ³ at 68 F	8.47 gm/cm ³ @ 20 C
Specific Gravity	8.47	8.47
Electrical Resistivity	39.90 ohms-cmil/ft @ 68 F	6.63 microhm-cm @ 20 C
Electrical Conductivity	26 %IACS @ 68 F	0.152 MegaSiemens/cm @ 20 C
Thermal Conductivity	67 Btu · ft/(hr · ft ² · °F) at 68F	116.0 W/m · °K at 20 C
Coefficient of Thermal Expansion	11.30 · 10 ⁻⁶ per °F (68-572 F)	20.3 · 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	15000 ksi	103400 MPa
Modulus of Rigidity	5600 ksi	38610 MPa

Tempers Most Commonly Used

Flat Products	
BAR, DRAWN	H02
BAR, ROLLED	H01, H02
PLATE	H02
STRIP, DRAWN	H02
STRIP, ROLLED	H01, H02, H04, OS025, OS035, OS050

Other	
ROD	H01, H02, O60
SHAPES	M30
WIRE	H00, H02, OS025



Typical Uses

Automotive

Valve Stems for Tires

Builders Hardware

Butts

Consumer

Engravings

Electrical

Threaded Connectors

Fasteners

Nuts, Rivets, Screws

Industrial

Dials, Screw Machine Products, Gears, Nuts, Screws Rivets, Instrument Plates, Flare Fittings, Couplings

Marine

Drawn Shells

Other

Plumbing Fittings, Plumbers' Brass Goods

Casting Characteristics

No casting characteristics for this alloy.