



## C27000

Yellow Brass, 65%

### Chemical Composition

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

	Cu	Fe	Pb	Zn
Min./Max.	63.0-68.5	0.07	0.09	Rem.
Nominal	65	-	-	35

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

### Applicable Specifications

Product	Specification
Bolts	ASTM F468
Nuts	ASTM F467
Rod	SAE J463, J461
Screws	ASTM F468
Studs	ASTM F468
Tube	ASTM B135
Tube, Welded	ASTM B587
Wire	AMS 4712, 4713
	ASTM B134
	SAE J461, J463
Wire, Tinned	AMS 4710

### Common Fabrication Processes

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

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**Millard Wire & Specialty Strip Co.**

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## 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	Not Recommended
Butt Weld	Good
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Poor
Machinability Rating	30

## 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	1300	705
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		



# C27000 Specification Sheet

## 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									MPa	MPa	J	
<b>Wire</b>																				
OS035	0.08	0	TYP	68	50	-	-	-	60	-	-	-	-	-	-	-	34	-	0	
	2			20	345	-	-	-	60	-	-	-	-	-	-	-	234	-	0	
<b>Flat Products</b>																				
H02	0.04	0	TYP	68	61	50	-	-	23	70	-	-	65	-	-	-	40	-	0	
	1			20	421	345	-	-	23	70	-	-	65	-	-	-	276	-	0	
OS015	0.04	0	TYP	68	53	22	-	-	54	-	-	78	43	-	-	-	-	-	0	
	1			20	365	152	-	-	54	-	-	78	43	-	-	-	-	-	0	
H06	0.04	0	TYP	68	85	62	-	-	5	87	-	-	74	-	-	-	45	-	0	
	1			20	586	427	-	-	5	87	-	-	74	-	-	-	310	-	0	
OS035	0.04	0	TYP	68	49	17	-	-	57	-	-	68	31	-	-	-	34	-	0	
	1			20	338	117	-	-	57	-	-	68	31	-	-	-	234	-	0	
H04	0.04	0	TYP	68	74	60	-	-	8	80	-	-	70	-	-	-	43	14	0	
	1			20	510	414	-	-	8	80	-	-	70	-	-	-	296	97	0	
<b>Wire</b>																				
H08	0.08	0	TYP	68	128	-	-	-	3	-	-	-	-	-	-	-	60	-	0	
	2			20	883	-	-	-	3	-	-	-	-	-	-	-	414	-	0	
<b>Flat Products</b>																				
H08	0.04	0	TYP	68	91	62	-	-	3	90	-	-	76	-	-	-	47	20	0	
	1			20	627	427	-	-	3	90	-	-	76	-	-	-	324	138	0	
<b>Rod</b>																				
H00	1	6	TYP	68	55	40	-	-	48	55	-	-	-	-	-	-	36	-	0	
	25.4			20	379	276	-	-	48	55	-	-	-	-	-	-	248	-	0	
OS050	1	0	TYP	68	48	16	-	-	65	-	-	65	-	-	-	-	34	-	0	
	25.4			20	331	110	-	-	65	-	-	65	-	-	-	-	234	-	0	
<b>Wire</b>																				
H01	0.08	0	TYP	68	70	-	-	-	20	-	-	-	-	-	-	-	42	22	0	
	2			20	483	-	-	-	20	-	-	-	-	-	-	-	290	152	0	
H00	0.08	0	TYP	68	58	-	-	-	35	-	-	-	-	-	-	-	38	-	0	
	2			20	400	-	-	-	35	-	-	-	-	-	-	-	262	-	0	
<b>Flat Products</b>																				
OS070	0.04	0	TYP	68	46	14	-	-	65	-	-	58	15	-	-	-	32	12	0	
	1			20	317	97	-	-	65	-	-	58	15	-	-	-	221	83	0	
<b>Wire</b>																				
H02	0.08	0	TYP	68	88	-	-	-	15	-	-	-	-	-	-	-	-	-	0	
	2			20	607	-	-	-	15	-	-	-	-	-	-	-	-	-	0	
H06	0.08	0	TYP	68	120	-	-	-	4	-	-	-	-	-	-	-	60	-	0	
	2			20	827	-	-	-	4	-	-	-	-	-	-	-	414	-	0	
<b>Flat Products</b>																				
OS050	0.04	0	TYP	68	47	15	-	-	62	-	-	64	26	-	-	-	-	-	0	
	1			20	324	103	-	-	62	-	-	64	26	-	-	-	-	-	0	
<b>Wire</b>																				
H04	0.08	0	TYP	68	110	-	-	-	8	-	-	-	-	-	-	-	55	-	0	
	2			20	758	-	-	-	8	-	-	-	-	-	-	-	379	-	0	
<b>Flat Products</b>																				
H01	0.04	0	TYP	68	54	40	-	-	43	55	-	-	54	-	-	-	36	-	0	
	1			20	372	276	-	-	43	55	-	-	54	-	-	-	248	-	0	
H00	0.04	0	TYP	68	50	35	-	-	50	50	-	-	50	-	-	-	-	-	0	
	1			20	345	241	-	-	50	50	-	-	50	-	-	-	-	-	0	
OS025	0.04	0	TYP	68	51	19	-	-	55	-	-	72	36	-	-	-	-	-	0	
	1			20	352	131	-	-	55	-	-	72	36	-	-	-	-	-	0	

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

## Physical Properties

Property	US Customary	Metric
Melting Point - Liquidus	1710° F	932° C
Melting Point - Solidus	1660° F	904° C
Density	0.306 lb/in <sup>3</sup> at 68° F	8.47 gm/cm <sup>3</sup> @ 20° C
Specific Gravity	8.47	8.47
Electrical Resistivity	38.40 ohms-cmil/ft @ 68° F	6.38 microhm-cm @ 20° C
Electrical Conductivity	27 %IACS @ 68° F	0.158 MegaSiemens/cm @ 20° C
Thermal Conductivity	67 Btu·ft/(hr·ft <sup>2</sup> ·°F) at 68°F	116.0 W/m·°K at 20°C
Coefficient of Thermal Expansion	11.30·10 <sup>-6</sup> per °F (68-572° F)	20.3·10 <sup>-6</sup> 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	
PLATE	H04, OS050
SHEET	H02, H04, OS015, OS050
STRIP, ROLLED	H00, H01, H02, H04, H06, H08, OS015, OS025, OS035, OS050, OS070
WIRE, DRAWN	H02, H04, OS050
WIRE, ROLLED	H02, H04, H08, OS050

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

## Typical Uses

### Architecture

Handrails, Grillwork

### Automotive

Tanks, Radiator Cores

### Builders Hardware

Push Plates, Finish Hardware, Hinges, Stencils, Kick Plates, Locks

### Electrical

Socket Shells, Screw Shells, Reflectors, Lamp Fixtures, Flashlight Shells



## Typical Uses (cont'd)

### **Fasteners**

Grommets, Eyelets, Screws, Rivets, Fasteners, Pins

### **Industrial**

Bead Chain, Springs, Chain

### **Marine**

Fasteners

### **Plumbing**

Sink Strainers, Plumbing Accessories

## **Casting Characteristics**

No casting characteristics available for this alloy.