

# C24000

Wrought

<b>Product Description:</b>	Low Brass, 80%
<b>Tempers:</b>	H01 Quarter Hard, H02 Half-Hard, H04 Hard
<b>Solids:</b>	3/8" to 2 1/2" OD
<b>Hex:</b>	3/8" to 2" OD
<b>Rectangles:</b>	Consult Mill
<b>Standard Lengths:</b>	144"

## Typical Uses

<b>Architecture</b>	medallions, ornamental components, spandrels
<b>Builders Hardware</b>	decorative panels
<b>Consumer</b>	clock dials, musical instrument parts, plaques
<b>Electrical</b>	battery caps, rotor bars for AC motors
<b>Industrial</b>	flexible hose, flexible hose bellows, pump lines, welding wire
<b>Other</b>	tokens

## Similar or Equivalent Specification

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	MILITARY	OTHER
C24000	B927 B927M						

## Chemical Composition

Cu%	Pb%	Zn%	Fe%
78.50- 81.50	0.05	Rem.	0.05

Chemical Composition according to ASTM B927/B927M-17

Note: Cu + Sum of Named Elements 99.8% min. Single values represent maximums.

## Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/cu in at 68° F)
C24000	30	0.313



# Mechanical Properties

C24000 continued

Mechanical Properties according to ASTM B927/B927M-17  
C24000  
H01 Quarter-Hard

## SIZE RANGE: UNDER 1/2" DIAMETER

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
47	324	25	172	18	55	

## SIZE RANGE: 1/2" DIAMETER TO 1" INCLUSIVE

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
45	310	20	138	20	55	

## SIZE RANGE: OVER 1" DIAMETER

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
43	296	18	124	22	55	



C24000  
H02 Half-Hard

C24000 continued

**SIZE RANGE: UNDER ½" DIAMETER**

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
53	365	33	228	10	70	

**SIZE RANGE: ½" DIAMETER TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
48	331	30	207	13	70	

**SIZE RANGE: OVER 1" DIAMETER**

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
43	296	28	193	15	70	



C24000  
H04 Hard

C24000 continued

**SIZE RANGE: UNDER ½" DIAMETER**

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
68	469	45	310	8	82	

**SIZE RANGE: ½" DIAMETER TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
65	448	40	276	10	82	

**SIZE RANGE: OVER 1" TO 2" DIAMETER**

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
60	414	35	241	12	82	

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1830° F	999° C
Melting Point – Solidus	1770° F	966° C
Density	0.313 lb/in <sup>3</sup> at 68° F	8.67 gm/cm <sup>3</sup> at 20° C
Specific Gravity	8.67	8.67
Electrical Conductivity	32% IACS at 68° F	0.186 MegaSiemens/cm at 20° C
Thermal Conductivity	81 Btu · ft/(hr · ft <sup>2</sup> · °F) at 68° F	140.3 W/m at 20° C
Coefficient of Thermal Expansion	10.6 · 10 <sup>-6</sup> per °F (68°-572° F)	18.4 · 10 <sup>-6</sup> per °C (20°-300° C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68° F	377.1 J/kg at 293° C
Modulus of Elasticity in Tension	16000 ksi	110317 MPa
Modulus of Rigidity	6000 ksi	41369 MPa

Physical Properties provided by CDA



## Fabrication Properties

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

Fabrication Properties provided by CDA

## Thermal Properties C24000 continued

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature		
Solution Minimum		
Solution Maximum		
Solution Time		
Solution Medium		
Precipitation Value		
Precipitation Time		
Precipitation Medium		
Annealing Minimum	800	427
Annealing Maximum	1300	704
Annealing Time		
Hot Treatment Minimum	1500	816
Hot Treatment Maximum	1650	899

Thermal Properties provided by CDA