

# C24000

Extruded and Drawn

<b>Product Description:</b>	Low Brass 80%
<b>Temper:</b>	H01 Quarter Hard, H02 Half Hard, H04 Hard
<b>Solids:</b>	3/8" to 2 1/2" O.D.
<b>Hex:</b>	3/8" to 2" O.D.
<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 (AC motors)
<b>Industrial</b>	flexible hose, flexible hose bellows, pump lines, welding wire
<b>Other</b>	tokens

## Similar or Equivalent Specification

CDA	ASTM	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/in <sup>3</sup> at 68 ° F)
C24000	30	0.313



## Mechanical Properties

Mechanical Properties according to ASTM B927/B927M-17

C24000

H01 Quarter Hard

**SIZE RANGE: UNDER 1/2" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
47	325	25	170	18	55	

**SIZE RANGE: 1/2" DIAMETER ROD TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
45	310	20	140	20	55	

**SIZE RANGE: OVER 1" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
43	295	18	125	22	55	

C24000  
H02 Half Hard

**SIZE RANGE: UNDER 1/2" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
53	365	33	230	10	70	

**SIZE RANGE: 1/2" DIAMETER ROD TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
48	330	30	205	13	70	

**SIZE RANGE: OVER 1" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
43	295	28	195	15	70	

C24000  
H04 Hard

**SIZE RANGE: UNDER 1/2" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
68	470	45	310	8	82	

**SIZE RANGE: 1/2" DIAMETER ROD TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
65	450	40	275	10	82	

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

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
60	415	35	240	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/sq ft/ft hr/ °F at 68 °F	140.3 W/m at 20 °C
Coefficient of Thermal Expansion 68-572	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 20 °C
Modulus of Elasticity in Tension	16000 ksi	110317 MPa
Modulus of Rigidity	6000 ksi	41369 MPa

Physical Properties provided by CDA

## Fabrication Properties

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
Machinability Rating	30

Fabrication Properties provided by CDA

## 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

Common Fabrication Processes provided by CDA

## Thermal Properties

Treatment	Minimum*	Maximum*
Annealing	800	1300
Hot Treatment	1500	1650

Thermal Properties provided by CDA

\*Temperature is measured in Fahrenheit.