

# C51000

Cast and Drawn

<b>Product Description:</b>	Phosphor Bronze 5% A
<b>Tempers:</b>	H04 Hard, H08 Spring
<b>Solids:</b>	3/8" to 2 1/2" O.D.
<b>Hex:</b>	3/8" to 2" O.D.
<b>Rectangles:</b>	Consult Mill
<b>Standard Lengths:</b>	144"

## Typical Uses

<b>Architecture</b>	bridge bearing plates
<b>Electrical</b>	electrical connectors, electrical flexing contact blades, electromechanical spring components, electronic and precision instrument parts, electronic connectors, fuse clips, resistance wire, switch parts, wire brushes
<b>Fasteners</b>	cotter pins, fasteners, lock washers
<b>Industrial</b>	beater bar, bellows, bourdon tubes, chemical hardware, clutch disks, diaphragms, perforated sheets, pressure-responsive elements, sleeve bushings, springs, textile machinery, truss wire, welding rods

## Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C51000	B139 B139M	J461 J463	4625			

## Chemical Composition

Cu%	Pb%	Sn%	Zn%	Fe%	P%
Rem.	0.05	4.20- 5.80	0.30	0.10	0.03- 0.35

Chemical Composition according to ASTM B139/B139M-12(2017)

Note: Cu + Sum of Named Elements, 99.5% min. Single values represent maximums.

## Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in <sup>3</sup> at 68 ° F)
C51000	20	0.320

## Mechanical Properties

Mechanical Properties according to ASTM B139/B139M-12(2017)

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H04 Hard

**SIZE RANGE: ¼" TO ½" ROUND AND HEXAGONAL INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
70	485			13	87	

**SIZE RANGE: OVER ½" TO 1" ROUND AND HEXAGONAL INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
60	415			15	87	

**SIZE RANGE: OVER 1" ROUND AND HEXAGONAL**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
55	380			18	87	

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H08 Spring

**SIZE RANGE: 0.026" TO ¼" ROUND INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
115	790					

**SIZE RANGE: OVER 1/16" TO 1/8" ROUND INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
110	760					

**SIZE RANGE: OVER 1/8" TO 1/4" ROUND INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
105	725			3.5		

**SIZE RANGE: OVER 1/4" TO 3/8" ROUND INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
100	690			5		

**SIZE RANGE: OVER 3/8" TO 1/2" ROUND INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or Specimen Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
90	620			9	95	