

# C94300

Cast

<b>Product Description:</b>	High-Leaded Tin Bronze
<b>Solids:</b>	½" to 10" O.D.
<b>Tubes:</b>	1" to 16" O.D.
<b>Rectangles:</b>	Up to 10"
<b>Standard Lengths:</b>	144"
<b>Shape/Form:</b>	semi-finished, mill stock or near-net shapes, anode, bar stock, billet/bloom, squares, hex, plate, profile or structural shape, flats/rectangular bar

## Typical Uses

**Industrial** high-speed bearings for light loads, high-speed/light-to-medium pressure bushings, railroad applications, soft bushings, soft metal applications

## Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C94300	B505 B505M	J461 J462		QQ-C-390, E1 QQ-B-1005, Comp 18	MIL-B-16261, Grade V	Soft Bronze

## Chemical Composition

Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni% <sup>1</sup>	Al%	S% <sup>2</sup>	Sb%	Si%
67.00- 72.00	23.00- 27.00	4.50- 6.00	0.80	0.15	1.50	1.00	0.005	0.25	0.80	0.005

Chemical Composition according to ASTM B505/B505M-18

<sup>1</sup>Ni value includes Co.

<sup>2</sup>For continuous castings, S shall be 0.25% max.

Note: Cu + Sum of Named Elements, 99.0% min. Single values represent maximums.

## Machinability

Alloy	Machinability Rating	Density (lb/in <sup>3</sup> at 68 °F)
C94300	80	0.336



## Mechanical Properties

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness (500 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
21	145	15	103	7	45	

Mechanical Properties according to ASTM B505/B505M-18

## Physical Properties

	US Customary	Metric
Density	0.336 lb/in <sup>3</sup> at 68 °F	9.3 gm/cm <sup>3</sup> at 20 °C
Specific Gravity	9.3	9.3
Electrical Conductivity	9% IACS at 68 °F	0.053 MegaSiemens/cm at 20 °C
Thermal Conductivity	36.2 Btu/sq ft/ft hr/°F at 68 °F	62.7 W/m at 20 °C
Specific Heat Capacity	0.09 Btu/lb/°F at 68 °F	377.1 J/kg at 20 °C
Modulus of Elasticity in Tension	10500 ksi	72400 MPa
Incipient Melting	600 °F	316 °C
Magnetic Permeability	1	1

Physical Properties provided by CDA

## Fabrication Properties

Technique	Suitability
Soldering	Good
Brazing*	Poor
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Machinability Rating	80

Fabrication Properties provided by CDA

\*Since brazing is performed within the hot-short range, strain must be avoided during brazing and cooling.

## Thermal Properties

Treatment	Value*	Time**
Stress Relief	500	
Solution Treatment		0

Thermal Properties provided by CDA

\*Temperature is measured in Fahrenheit. \*\*For Stress Relief, Solution Treatment and Annealing - Time is measured in hours/inch of thickness. For Precipitation Heat Treatment - Time is measured in hours.