

# C95300

Continuous Cast

<b>Product Description:</b>	Aluminum Bronze
<b>Solids:</b>	½" to 9" O.D.
<b>Tubes:</b>	1½" to 9" O.D.
<b>Rectangles:</b>	Up to 15"
<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

<b>Electrical</b>	connectors
<b>Fasteners</b>	stripped nuts
<b>Industrial</b>	bearing segment for the steel industry, cams, gears, high-strength clamps, high-temperature applications, large hold-down screws, mining machine parts, pickling baskets, pickling hooks, pressure blocks for the steel industry, valve bodies, welding jaws
<b>Marine</b>	covers for marine hardware, marine equipment

Note: Also available in a heat-treated condition.

## Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C95300	B505 B505M	68B J461 J462		QQ-C-390, G7 QQ-B-671, Class 2	MIL-B-16033, Class 2	Aluminum Bronze 9B

## Chemical Composition

Cu%	Fe%	Al%
86.00 min	0.80- 1.50	9.00- 11.00

Chemical Composition according to ASTM B505/B505M-18

Note: Cu + Sum of Named Elements, 99.0% min. Unless otherwise noted, single values represent maximums.



## Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in <sup>3</sup> at 68 °F)
C95300	55	0.272

## Mechanical Properties

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness (3000 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
70	483	26	179	25	125	

Mechanical Properties according to ASTM B505/B505M-18

## Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1913 °F	1045 °C
Melting Point – Solidus	1904 °F	1040 °C
Density	0.272 lb/in <sup>3</sup> at 68 °F	7.53 gm/cm <sup>3</sup> at 20 °C
Specific Gravity	7.53	7.53
Electrical Conductivity	13% IACS at 68 °F	0.075 MegaSiemens/cm at 20 °C
Thermal Conductivity	36.3 Btu/sq ft/ft hr/°F at 68 °F	62.8 W/m at 20 °C
Coefficient of Thermal Expansion 68-572	9 · 10 <sup>-6</sup> per °F (68-572 °F)	15.5 · 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	110000 MPa
Magnetic Permeability*	1.07	1.07

Physical Properties provided by CDA

\*Field Strength 8 kA/m

## Fabrication Properties

Technique	Suitability
Soldering	Good
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Good
Machinability Rating	55

Fabrication Properties provided by CDA

## Thermal Properties

Treatment	Min*	Max*	Value*	Time**	Medium
Stress Relief			600		
Solution Treatment	1585	1635		1	Water
Annealing	1150	1225		1	

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.