

C92500

Continuous Cast

Product Description:	Nickel-Phosphor Bronze
Solids:	½" to 13" O.D.
Tubes:	1" to 16" O.D.
Rectangles:	Up to 20"
Standard Lengths:	144"
Shape/Form:	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

Automotive automotive synchronizer rings

Industrial gears

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C92500	B505 B505M	J461 J462				

Chemical Composition

Cu% ¹	Pb%	Sn%	Zn%	Fe%	P%	Ni% ^{1,2}	Al%	S%	Sb%	Si%
85.00- 88.00	1.00- 1.50	10.00- 12.00	0.50	0.30	1.50	0.80- 1.50	0.005	0.05	0.25	0.005

Chemical Composition according to ASTM B505/B505M-18

¹In determining Cu min., Cu may be calculated as Cu + Ni. ²Ni value includes Co.
Note: Cu + Sum of Named Elements, 99.3% min. Single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 ° F)
C92500	30	0.317



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	
40	276	24	165	10	80	

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

	US Customary	Metric
Density	0.317 lb/in ³ at 68 °F	8.7 gm/cm ³ at 20 °C
Specific Gravity	8.7	8.7
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
Incipient Melting	600 °F	316 °C

Physical Properties provided by CDA

Fabrication Properties

Technique	Suitability
Soldering	Excellent
Brazing*	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Machinability Rating	30

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.