

C96400

Continuous Cast

Product Description:	Copper-Nickel
Solids:	½" to 9" O.D.
Tubes:	1⅛" to 9" O.D.
Rectangles:	Up to 15"
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

Industrial	fittings, pump bodies, pump fixtures, steam fittings
Marine	boat parts, elbows/flanges/pump bodies/valves used for sea water corrosion resistance

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C96400	B505 B505M					70-30 Copper Nickel

Chemical Composition

Cu%	Pb%	Fe%	P%	Ni% ¹	C%	Mn%	S%	Si%	Nb%
Rem.	0.01	0.25- 1.50	0.02	28.00- 32.00	0.15	1.50	0.02	0.50	0.50- 1.50

Chemical Composition according to ASTM B505/B505M-18

¹Ni value includes Co.

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

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 °F)
C96400	20	0.323



Mechanical Properties

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
65	448	35	241	25		

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	2260 °F	1238 °C
Melting Point – Solidus	2140 °F	1171 °C
Density	0.323 lb/in ³ at 68 °F	8.94 gm/cm ³ at 20 °C
Specific Gravity	8.94	8.94
Electrical Conductivity	5% IACS at 68 °F	0.029 MegaSiemens/cm at 20 °C
Thermal Conductivity	16.4 Btu/sq ft/ft hr/°F at 68 °F	28.4 W/m at 20 °C
Coefficient of Thermal Expansion 68-572	9 · 10 ⁻⁶ per °F (68-572 °F)	15.5 · 10 ⁻⁶ 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	21000 ksi	144791 MPa

Physical Properties provided by CDA

Fabrication Properties

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding*	Good
Coated Metal Arc Welding*	Good
Machinability Rating	20

Fabrication Properties provided by CDA

*Filler metal R CuNi, or E CuNi.

Thermal Properties

Treatment	Time*
Solution Treatment	0

Thermal Properties provided by CDA

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