C97300

Continuous cast	
Product description	Nickel silver bronze
Solids	3/4" to 9" O.D.
Tubes	1 1/8" to 9" O.D.
Rectangles	Up to 14"
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

Architecture

Ornamental castings, statuary

Builders

Hardware

Industrial

Valves

Similiar or equivalent specification						
CDA	ASTM	SAE	AMS	Federal	Military	Other
C97300	B505 B505M					15% Nickel silver

Chemical composition											
Cu (%)	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%)[1]	Al (%)	Mn (%)	S (%)	Sb (%)	Si (%)
53.00-58.00	8.00-11.00	1.50-3.00	17.00-25.00	1.50	0.05	11.00-14.00	0.005	0.50	0.08	0.35	0.15

Chemical composition according to ASTM B505/B505M-23

[1]Ni value includes Co.
Note: Cu + sum of named elements, 99.0% min. Single values represent maximums.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in^3 at 68 $^\circ$F)
C97300	70	0.321

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	
30	207	15	103	8	55	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Melting point – liquidus	1904 °F	1040 °C
Melting point – solidus	1850 °F	1010 °C
Density	0.321 lb/in³ at 68 °F	8.89 gm/cm³ at 20 °C
Specific gravity	8.89	8.89
Electrical conductivity	6% IACS at 68 °F	0.033 MegaSiemens/cm at 20 °C
Thermal conductivity	16.5 Btu/sq ft/ft hr/ °F at 68 °F	28.6 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
Modulas of elasticity in tension	16000 ksi	110000 MPa

Physical properties provided by CDA

Fabrication properties

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Not recommended
Coated metal arc welding	Not recommended
Machinability rating	70

Fabrication properties provided by CDA.

Casting characteristics

Casting attribute	Level
Casting yield	Medium
Drossing	High
Effect of section size	Medium
Fluidity	High
Gassing	Medium
Patternmakers shrinkage (inches per foot)	3/16
Shrinkage in solidification	Medium

Casting characteristics provided by CDA