

C97600

Cast

Product Description:	Nickel Silver Bronze
Solids:	¾" to 9" O.D.
Tubes:	1⅞" 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
Builders Hardware	door hardware for prison doors, hardware, window hardware
Consumer	piano keys
Industrial	pumps, valves
Marine	marine furniture
Plumbing	sanitary fittings

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C97600	B505 B505M					20% Nickel Silver

Chemical Composition

Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni% ¹	Al%	Mn%	S%	Sb%	Si%
63.00- 67.00	3.00- 5.00	3.50- 4.50	3.00- 9.00	1.50	0.05	19.00- 21.50	0.005	1.00	0.08	0.25	0.15

Chemical Composition according to ASTM B505/B505M-18

¹Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.7% min. Single values represent maximums.



Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 °F)
C97600	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	
40	276	20	138	10	80	

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	2089 °F	1143 °C
Melting Point – Solidus	2027 °F	1108 °C
Density	0.321 lb/in ³ at 68 °F	8.9 gm/cm ³ at 20 °C
Specific Gravity	8.9	8.9
Electrical Conductivity	5% IACS at 68 °F	0.029 MegaSiemens/cm at 20 °C
Thermal Conductivity	13 Btu/sq ft/ft hr/°F at 68 °F	22.6 W/m at 20 °C
Coefficient of Thermal Expansion 68-392	9.3 · 10 ⁻⁶ per °F (68-392 °F)	16.1 · 10 ⁻⁶ per °C (20-200 °C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68 °F	377.1 J/kg at 20 °C
Modulus of Elasticity in Tension	19000 ksi	131000 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

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.