C97600

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

Builders hardware

Door hardware for prison doors, hardware, window hardware

Consumer

Piano keys

Industrial

Pumps, valves

Marine

Marine furniture

Plumbing

Sanitary fittings

Similiar 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-23

[1]Ni 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/in³ 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-23

Physical properties

	US customary	Metric
Melting point – liquidus	2089 °F	1143 °C
Melting point – solidus	2027 °F	1108 °C
Density	0.321 lb/in³ at 68 °F	8.9 gm/cm³ 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
Modulas 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.

Casting characteristics

Casting attribute	Level
Casting yield	Medium
Drossing	Medium-high
Effect of section size	Medium
Fluidity	High
Gassing	Medium-high
Patternmakers shrinkage (inches per foot)	1/8
Shrinkage in solidification	Medium

Casting characteristics provided by CDA