

# C97800

## 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

Hardware

### Consumer

Musical instruments components

### Industrial

Fittings for dairy and food processing, valves

## Similar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C97800	B505 B505M					25% Nickel silver

## Chemical composition

Cu (%)	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%) <sup>1</sup>	Al (%)	Mn (%)	S (%)	Sb (%)	Si (%)
64.00-67.00	1.00-2.50	4.00-5.50	1.00-4.00	1.50	0.05	24.00-27.00	0.005	1.00	0.08	0.20	0.15

Chemical composition according to ASTM B505/B505M-23

<sup>1</sup>Ni value includes Co.

Note: Cu + sum of named elements, 99.6% min. Single values represent maximums.

## Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in <sup>3</sup> at 68° F)
C97800	60	0.32

## Mechanical properties

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Brinell hardness (3000 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
45	310	22	152	8	130	

Mechanical properties according to ASTM B505/B505M-23

## Physical properties

	US customary	Metric
Melting point – liquidus	2156 °F	1180 °C
Melting point – solidus	2084 °F	1140 °C
Density	0.32 lb/in <sup>3</sup> at 68 °F	8.86 gm/cm <sup>3</sup> at 20 °C
Specific gravity	8.86	8.86
Electrical conductivity	4% IACS at 68 °F	0.026 MegaSiemens/cm at 20 °C
Thermal conductivity	14.7 Btu/sq ft/ft hr/°F at 68 °F	25.4 W/m at 20 °C
Coefficient of thermal expansion 68-572	9.7 · 10 <sup>-6</sup> per °F (68-572 °F)	16.8 · 10 <sup>-6</sup> 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	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	60

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)	3/16
Shrinkage in solidification	Medium

Casting characteristics provided by CDA