C94800

Continuous cast	
Product description	Leaded nickel-tin bronze
Solids	1/2" to 10" O.D.
Tubes	1" to 16" O.D.
Rectangles	Up to 20"
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

Builders hardware

Structural castings

Industrial

Bearings, gear components, machinery parts, motion translation devices

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C94800	B505 B505M B948 B292-B			QQ-C-390, F3		

Chemical composition

Cu (%)	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%)[1]	Al (%)	Mn (%)	S (%)	Sb (%)	Si (%)
84.00-89.00	0.30-1.00	4.50-6.00	1.00-2.50	0.25	0.05	4.50-6.00	0.005	0.20	0.05	0.15	0.005

Chemical composition according to ASTM B505/B505M-23

[1]Ni value includes Co.
Note: Cu + sum of named elements, 98.7% min. Single values represent maximums.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in^3 at 68 $^\circ$F)
C94800	50	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 (500 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
40	276	20	138	20	80	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Melting point – liquidus	1880 °F	1027 °C
Melting point – solidus	1660 °F	904 °C
Density	0.32 lb/in³ at 68 °F	8.86 gm/cm³ at 20 °C
Specific gravity	8.86	8.86
Electrical conductivity	12% IACS at 68 °F	0.07 MegaSiemens/cm at 20 °C
Thermal conductivity	22.3 Btu/sq ft/ft hr/ °F at 68 °F	38.6 W/m at 20 °C
Coefficient of thermal expansion 68-572	10.9 · 10^{-6} per °F (68-572 °F)	18.8 · 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	15000 ksi	103400 MPa

Physical properties provided by CDA

Fabrication properties

Technique	Suitability
Soldering	Excellent
Brazing*	Good
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Not recommended
Coated metal arc welding	Not recommended
Machinability rating	50

Fabrication properties provided by CDA

**Since brazing is performed within the hot-short range, strain must be avoided during brazing and cooling.*

Casting characteristics

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

Casting characteristics provided by CDA