

C94800

Continuous Cast

Product Description:	Leaded Nickel-Tin Bronze
Solids:	½" 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

Similar 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-18

¹Ni 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 ° 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-18

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1880 °F	1027 °C
Melting Point – Solidus	1660 °F	904 °C
Density	0.32 lb/in ³ at 68 °F	8.86 gm/cm ³ 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
Modulus 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.

Thermal Properties

Treatment	Min*	Max*	Value*	Time**	Medium
Stress Relief			500		
Solution Treatment	1425	1475		2	Water
Precipitation Treatment			580	6	Air

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.