

C94800

Cast

Product Description:	Leaded Nickel-Tin Bronze
Solids:	½" to 10" OD
Tubes:	1" to 16" OD
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	gear components, motion translation devices, bearings, machinery parts

Similar or Equivalent Specification

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	MILITARY	OTHER
C94800	B505 B505M B948 B292-B	51N			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-14

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/cu in at 68° F)
C94800	50	0.320



Mechanical Properties

C94800 continued

Tensile Strength, min		Yield Strength, at .5% extension under load min		Elongation, in 2 in. or 50 mm min	Brinell Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
40	276	20	138	20	80 (500 kg)	

Mechanical Properties according to ASTM B505/B505M-14

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1880° F	1027° C
Melting Point – Solidus	1660° F	904° C
Density	0.320 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 · ft/(hr · ft ² · °F) at 68° F	38.6 W/m at 20° C
Coefficient of Thermal Expansion	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 293° C
Modulus of Elasticity in Tension	15000 ksi	103400 MPa

Physical Properties provided by CDA

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature	500	260
Solution Minimum	1425	775
Solution Maximum	1475	802
Solution Time	2.0	
Solution Medium	Water	
Precipitation Value	580	305
Precipitation Time	6.0	
Precipitation Medium	Air	
Annealing Minimum		
Annealing Maximum		
Annealing Time		
Hot Treatment Minimum		
Hot Treatment Maximum		

Thermal Properties provided by CDA

