

C91100

Continuous Cast

Product Description:	High Tin Bronze
Solids:	1" to 6" O.D.
Tubes:	1" to 6" O.D.
Rectangles:	Up to 10"
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

Electrical	hollow conductors
Industrial	bearings, bushings, piston rings

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C91100	B22 B22M					

Chemical Composition

Cu% ¹	Pb%	Sn%	Zn%	Fe%	P% ²	Ni% ³	Al%	S%	Sb%	Si%
82.00- 85.00	0.25	15.00- 17.00	0.25	0.25	1.00	0.50	0.005	0.05	0.20	0.005

Chemical Composition according to ASTM B22/B22M-17

¹In determining Cu min., Cu may be calculated as Cu + Ni.

²For continuous castings, P shall be 1.5% max.

³Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.4% min. Single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 ° F)
C91100	10	0.318



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	
					135	

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1742 °F	950 °C
Melting Point – Solidus	1505 °F	818 °C
Electrical Conductivity	8% IACS at 68 °F	0.049 MegaSiemens/cm at 20 °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	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair
Machinability Rating	10

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	Value*	Time**
Stress Relief	500	
Solution Treatment		0

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.