

C91300

Continuous cast	GreenAlloys™
Product description	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
Compliance	C91300 is compliant with key legislation including (1) Federal Safe Drinking Water Act - SDWA, (2) S. 3874 Federal Reduction of Lead in Drinking Water Act, (3) California AB1953, and (4) Vermont Act 193

Typical uses

Consumer

Bells

Industrial

Bearings, bushings, piston rings, valve bodies

Similar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C91300	B505 B505M B22 B22M		7322	QQ-C-390, D1		

Chemical composition

Cu (%) ¹	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%) ^{1,2}	Al (%)	S (%)	Sb (%)	Si (%)
79.00-82.00	0.25	18.00-20.00	0.25	0.25	1.50	0.50	0.005	0.05	0.20	0.005

Chemical composition according to ASTM B505/B505M-23

¹In determining Cu min., Cu may be calculated as Cu + Ni. ²Ni 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)
C91300	10	0.318

C91300 continued

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	
					160	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Melting point – liquidus	1632 °F	889 °C
Melting point – solidus	1505 °F	818 °C
Electrical conductivity	7% IACS at 68 °F	0.04 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	16000 ksi	110000 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.

Casting characteristics

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

Casting characteristics provided by CDA