C94300

Continuous cast	
Product description	High-leaded tin bronze
Solids	1/2" to 10" O.D.
Tubes	1" to 16" 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

Industrial

High-speed bearings for light loads, high-speed/light-to-medium pressure bushings, railroad applications, soft bushings, soft metal applications

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C94300	B505 B505M	J461 J462		QQ-C-390, E1 QQ-B-1005, Comp 18	MIL-B-16261, Grade V	Soft bronze

Chemical composition

Cu (%)	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%)[1]	Al (%)	S (%)[2]	Sb (%)	Si (%)
67.00-72.00	23.00-27.00	4.50-6.00	0.80	0.15	1.50	1.00	0.005	0.25	0.80	0.005

Chemical composition according to ASTM B505/B505M-23

[1]Ni value includes Co. [2]For continuous castings, S shall be 0.25% max.
Note: Cu + sum of named elements, 99.0% min. Single values represent maximums.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in^3 at 68 $^\circ$F)
C94300	80	0.336

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	
21	145	15	103	7	45	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Density	0.336 lb/in³ at 68˚F	9.3 gm/cm³ at 20˚C
Specific gravity	9.3	9.3
Electrical conductivity	9% IACS at 68˚F	0.053 MegaSiemens/cm at 20˚C
Thermal conductivity	36.2 Btu/sq ft/ft hr/˚F at 68˚F	62.7 W/m at 20˚C
Specific heat capacity	0.09 Btu/lb/˚F at 68˚F	377.1 J/kg at 20˚C
Modulas of elasticity in tension	10500 ksi	72400 MPa
Incipient melting	600˚F	316˚C
Magnetic permeability	1	1

Physical properties provided by CDA

Fabrication properties

Technique	Suitability
Soldering	Good
Brazing*	Poor
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Not recommended
Coated metal arc welding	Not recommended
Machinability rating	80

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	High
Drossing	Low
Effect of section size	Low
Fluidity	High
Gassing	Medium
Patternmakers shrinkage (inches per foot)	1/8
Shrinkage in solidification	Low

Casting characteristics provided by CDA