C94300

Continuous cast	
Product description	High-leaded tin bronze
Solids	1" 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