C99500

Continuous cast	
Product description	Special alloy
Solids	1/2" to 9" O.D.
Tubes	1 1/8" to 9" O.D.
Rectangles	Up to 14"
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

Electrical parts

Industrial

Gears for mining equipment, propeller wheels, valve stems

Marine

Outboard marine components

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C99500	B505 B505M B763					

Chemical composition

Cu (%)	Pb (%)	Zn (%)	Fe (%)	Ni (%)[1]	Al (%)	Mn (%)	Si (%)
Remain	0.09	0.50-2.00	3.00-5.00	3.50-5.50	0.50-2.00	0.50	0.50-2.00

Chemical composition according to ASTM B505/B505M-23

[1]Not including Co.
Note: Cu + sum of named elements, 99.7% min. Single values represent maximums.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in^3 at 68 $^\circ$F)
C99500	50	0.3

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	
70	483	40	276	12	145	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Density	0.3 lb/in³ at 68 °F	8.3 gm/cm³ at 20 °C
Specific gravity	8.3	8.3
Electrical conductivity	10% IACS at 68 °F	0.057 MegaSiemens/cm at 20 °C
Coefficient of thermal expansion 68-572	8.3 · 10^{-6} per °F (68-572 °F)	14.3 · 10^{-6} per °C (20-300 °C)
Modulas of elasticity in tension	19000 ksi	131000 MPa

Physical properties provided by CDA

Fabrication properties

Technique	Suitability
Gas shielded arc welding	Good
Machinability rating	50

Fabrication properties provided by CDA.

Casting characteristics

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

Casting characteristics provided by CDA