C95500

Standard-stocked product	Continuous cast	GreenAlloys™

Product description	Nickel-aluminum bronze
Solids	1/2" to 9" O.D.
Tubes	1 1/8" to 9" O.D.
Rectangles	Up to 15"
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	C95500 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

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C95500	B505 B505M	J461 J462		QQ-C-390, G3	MIL-B-16033, Class 4	Aluminum Bronze 9D

Chemical composition

Cu (%)	Fe (%)	Ni (%)[1]	Al (%)	Mn (%)
78.00 min	3.00-5.00	3.00-5.50	10.00-11.50	3.50

Chemical composition according to ASTM B505/B505M-23

[1]Ni value includes Co.
Note: Cu + sum of named elements, 99.5% min. Unless otherwise noted, single values represent maximums.

Typical uses

Builders hardware

Window hardware

Consumer

Musical instruments, piano keys

Electrical

Electrical hardware

Fasteners

Stuffing box nuts

Industrial

Aircraft components, bearings, bushings, gears, glands, glass molds, handgun recoil mechanisms, hot mill guides, landing gear parts, machine parts, pickling equipment, piston guides, pump fluid ends, sewage treatment applications, valve bodies, valve components, valve guides, valve seats, wear plates, welding jaws, worm wheels, worms

Marine

Covers for marine hardware, marine applications, marine hardware, ship building

Ordnance

Government fittings

Note: also available in heat-treated condition

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in³ at 68 °F)
C95500	50	0.272

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	
95	655	42	290	10	208	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Melting point – liquidus	1930 °F	1054 °C
Melting point – solidus	1900 °F	1038 °C
Density	0.272 lb/in³ at 68 °F	7.53 gm/cm³ at 20 °C
Specific gravity	7.53	7.53
Electrical conductivity	8% IACS at 68 °F	0.049 MegaSiemens/cm at 20 °C
Thermal conductivity	24.2 Btu/sq ft/ft hr/ °F at 68 °F	41.9 W/m at 20 °C
Coefficient of thermal expansion 68-572	9 · 10^{-6} per °F (68-572 °F)	15.5 · 10^{-6} per °C (20-300 °C)
Specific heat capacity	0.1 Btu/lb/ °F at 68 °F	419 J/kg at 20 °C
Modulas of elasticity in tension	16000 ksi	110000 MPa
Magnetic permeability*	1.32	1.32
Magnetic permeability**	1.2	1.2
Poisson's Ratio	0.32	0.32

Physical properties provided by CDA

**As cast, field strength 16 kA/m **TQ 50 temper, field strength 16 kA/m*

Fabrication properties

Technique	Suitability
Soldering	Good
Brazing	Fair
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Good
Coated metal arc welding	Good
Machinability rating	50

Fabrication properties provided by CDA

Casting characteristics

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

Casting characteristics provided by CDA