Bronze C95400

Standard-stocked product	Continuous cast	GreenAlloys™

Product description	Aluminum bronze
Solids	1/2" to 10" O.D.
Tubes	1 1/8" to 12" 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	C95400 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

Automotive

Weld guns

Fasteners

Large hold-down screws, nuts

Industrial

Bearing segments for the steel industry, bearings, bushings, gears, heavily loaded worm gears, high-strength clamps, landing gear parts, machine parts, pawl, pickling hooks, pressure blocks for the steel industry, pump parts, spur gears, valve bodies, valve guides, valve seats, valves, worm gears

Marine

Covers for marine hardware, ship building

Ordnance

Government fittings

Note: also available in heat-treated condition

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C95400	B505 B505M	J461 J462		QQ-C-390, G5 QQ-B-671, Class 3	MIL-B-16033, Class 3	Aluminum Bronze 9C

Chemical composition

Cu (%)	Fe (%)	Ni (%)[1]	Al (%)	Mn (%)
83.00 min	3.00-5.00	1.50	10.00-11.50	0.50

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.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in³ at 68 °F)
C95400	60	0.269

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	
85	586	32	221	12	170	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Melting point – liquidus	1900 °F	1038 °C
Melting point – solidus	1880 °F	1027 °C
Density	0.269 lb/in³ at 68 °F	7.45 gm/cm³ at 20 °C
Specific gravity	7.45	7.45
Electrical conductivity	13% IACS at 68 °F	0.075 MegaSiemens/cm at 20 °C
Thermal conductivity	33.9 Btu/sq ft/ft hr/ °F at 68 °F	58.7 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	15500 ksi	107000 MPa
Magnetic permeability*	1.27	1.27
Magnetic permeability**	1.2	1.2

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	Good
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Good
Coated metal arc welding	Good
Machinability rating	60

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