

C95400

Cast • GreenAlloy™

Product Description:	Aluminum Bronze
Solids:	½" to 9" OD
Tubes:	1½" to 9" OD
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 1974 – SDWA, (2) Federal Reduction of Lead in Drinking Water Act 2011 and (3) California AF1953

Typical Uses

Automotive	weld guns
Fasteners	nuts, large hold down screws
Industrial	bushings, high strength clamps, gears, valves, bearings, pawl, valve bodies, landing gear parts, worm gears, machine parts, pressure blocks for the steel industry, bearing segments for the steel industry, valve seats, valve guides, pickling hooks, spur gears, heavily loaded worm gears, pump parts
Marine	covers for marine hardware, ship building
Ordnance	government fittings

Note: Also available in heat-treated condition.

Similar or Equivalent Specification

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	MILITARY	OTHER
C95400	B505 B505M				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	3.00-		10.00-	
min	5.00	1.50	11.50	0.50

Chemical Composition according to ASTM B505/B505M-14

¹Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.5% min. Single values, unless otherwise noted, represent maximums.

Machinability

C95400 continued

Copper Alloy UNS No.	Machinability Rating	Density (lb/cu in at 68° F)
C95400	60	0.269

Mechanical Properties

Tensile Strength, min		Yield Strength, at .5% extension under load min		Elongation, in 2 in. or 50 mm min	Brinell Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
85	586	32	221	12	170 (3000 kg)	

Mechanical Properties according to ASTM B505/B505M-14

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1900° F	1038° C
Melting Point – Solidus	1880° F	1027° C
Density	0.269 lb/in ³ at 68° F	7.45 gm/cm ³ 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 · ft/(hr · ft ² · °F) at 68° F	58.7 W/m at 20° C
Coefficient of Thermal Expansion	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	419.0 J/kg at 293° C
Modulus 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

Joining Technique	Suitability
Soldering	Good
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Good
Coated Metal Arc Welding	Good

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature	600	316
Solution Minimum	1600	872
Solution Maximum	1675	914
Solution Time	1.0	
Solution Medium	Water	
Precipitation Value		
Precipitation Time		
Precipitation Medium		
Annealing Minimum	1150	622
Annealing Maximum	1225	663
Annealing Time	1.0	
Hot Treatment Minimum		
Hot Treatment Maximum		

Thermal Properties provided by CDA