C95400

Product Description:	Aluminum Bronze
Soilds:	1/2" to 9" OD
Tubes	11⁄8" 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
Marine	covers for marine hardware, ship building
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
Ordnance	government fittings

Note: Also available in heat-treated condition.

SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	SAE	FEDE	MILTIARY	OTHER
C95400	B505	J461	QQ-C-390, G5	MIL-B-16033, CLASS 3	ALUMINUM BRONZE 9C
		J462	QQ-B-671, CLASS 3		

CHEMICAL COMPOSITION

Alloy	Cu%	Fe%	Ni%	Al%	Mn%
C95400	83	3.00-5.00	1.5	10.00-11.50	0.5

Chemical Composition according to ASTM B505/B505M-14

MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
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 (3000kg)	

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/in3 at 68˚ F	7.45 gm/cm3 at 20˚ C
Specific Gravity	7.45	7.45
Electrical Resistivity	80.20 ohms-cmil/ft at 68˚ F	13.33 microhm-cm at 20˚ C
Electrical Conductivity	130% IACS at 68˚ F	0.075 MegaSiemens/cm at
Thermal Conductivity	33.90 Btu · ft/(hr · ft2 · ˚F) at	58.7 W/m at 20˚ C
Coefficient of Thermal Expansion	90 · 10-6 per ˚F (68˚-572˚ F)	16.2 · 10-6 per ˚C (20-300˚ C)
Specific Heat Capacity	0.10 Btu/lb/˚F at 68˚ F	419.0 J/kg at 293˚ C
Modulas of Elasticity in Tension	15500	107000 MPa
Magnetic Permeability*	1.2	1.2
Magnetic Permeability**	1.27	1.27

PHYSICAL PROPERTIES PROVIDED BY CDA

Fabrication Practices

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 0.0	1	
Solution Medium	Water	
Precipitation Value		
Precipitation Time		
Precipitation Medium	Water	
Annealing Minimum	1150	622
Annealing Maximum	1225	663
Annealing Time	1	
Hot Works Minimum		
Hot Works Maximum		

Thermal Properties provided by CDA