



TYPICAL USES

Fasteners	Nuts
Industrial	Machinery, Shafts, Valve Bodies, Propeller Hub, Worm Wheels, Bushings, Propeller Blades, Pickling Equipment, Worms, Wear Plates, Gears
Marine	Marine Hardware, Valves in contact with sea water, Covers for Marine Hardware, Ship Building
Plumbing	Elbows

Bronze Family: Nickel Aluminum Bronze
Solids: ½" to 9" OD
Tubes: 1⅛" to 9" OD
Rectangles: Up to 15"
Standard Lengths: 144"

SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C95800	ASTM B505				QQ-C-390 B TYPE III	415		Apha Nickel Aluminum Bronze

CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C95800	79.00- MIN	N/A	0.03	N/A	3.50- 4.50	4.00- 5.00	N/A	N/A	N/A	8.50- 9.50	0.80- 1.50	0.10

Chemical Composition according to ASTM B505-08

Note: Single values represent maximums.

MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
C95800	20	0.276

MECHANICAL PROPERTIES

Tensile Strength, min		Yield Strength, at .5% extension under load min		Elongation in 2 in. or 50 mm min, %	Brinell Hardness, min	Remarks
ksi	MPa	ksi	MPa			
85	586	35	241	18		

Mechanical Properties according to ASTM B505-08

PHYSICAL PROPERTIES

ALLOY: C95800 CONTINUED

	US Customary	Metric
Melting Point - Liquidus	1940 F	1060 C
Melting Point - Solidus	1910 F	1043 C
Density	0.276 lb/in ³ at 68 F	7.64 gm/cm ³ @ 20 C
Specific Gravity	7.640	7.64
Electrical Resistivity	146.70 ohms-cmil/ft @ 68 F	24.39 microhm-cm @ 20 C
Electrical Conductivity	7 %IACS @ 68 F	0.041 MegaSiemens/cm @ 20 C
Thermal Conductivity	20.80 Btu · ft/(hr · ft ² ·oF)at 68F	36.0 W/m · oK at 20 C
Coefficient of Thermal Expansion	9 · 10 ⁻⁶ per oF (68-572 F)	16.2 · 10 ⁻⁶ per oC (20-300 C)
Specific Heat Capacity	0.105 Btu/lb/oF at 68 F	440.0 J/kg · oK at 293 K
Modulus of Elasticity in Tension	10500 ksi	114000 MPa
Magnetic Permeability	1	1.05
Poisson's Ratio	0.320	0.32

Physical Properties provided by CDA

FABRICATION PRACTICES

Joining Technique	Suitability
Soldering	Good
Brazing	Fair
Oxyacetylene Welding	Not Recommended
Gas Shield 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		
Solution Maximum		
Solution Time	0.0	
Solution Medium	None	
Precipitation Value		
Precipitation Time		
Precipitation Medium	None	
Annealing Minimum		
Annealing Maximum		
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		

Thermal Properties provided by CDA