



## TYPICAL USES

**Architecture** Ornamental Castings, Statuary  
**Builders** Hardware  
**Industrial** Valves

**Bronze Family:** Nickel Silver Bronze  
**Solids:** ¾" to 9" OD  
**Tubes:** 1⅛" to 9" OD  
**Rectangles:** Up to 14"  
**Standard Lengths:** 144"

## SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C97300	ASTM B505					412		15% NICKEL SILVER

## CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C97300	53.00-58.00	1.50-3.00	8.00-11.00	17.00-25.00	1.50	11.00-14.00	0.35	0.05	0.08	0.005	N/A	0.15

Chemical Composition according to ASTM B505-08

Note: Single values represent maximums.

## MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
C97300	70	0.321

## 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			
30	207	15	103	8		

Mechanical Properties according to ASTM B505-08

## PHYSICAL PROPERTIES

ALLOY: C97300 CONTINUED

	US Customary	Metric
Melting Point - Liquidus	1904 F	1040 C
Melting Point - Solidus	1850 F	1010 C
Density	0.321 lb/in <sup>3</sup> at 68 F	8.89 gm/cm <sup>3</sup> @ 20 C
Specific Gravity	8.890	8.89
Electrical Resistivity	182.30 ohms-cmil/ft @ 68 F	30.3 microhm-cm @ 20 C
Electrical Conductivity	6 %IACS @ 68 F	0.033 MegaSiemens/cm @ 20 C
Thermal Conductivity	16.50 Btu · ft/(hr · ft <sup>2</sup> ·oF)at 68F	28.6 W/m · oK at 20 C
Coefficient of Thermal Expansion	9 ·10 <sup>-6</sup> per oF (68-572 F)	16.2 ·10 <sup>-6</sup> per oC (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/oF at 68 F	377.1 J/kg · oK at 293 K
Modulus of Elasticity in Tension	16000 ksi	110000 MPa

Physical Properties provided by CDA

## FABRICATION PRACTICES

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Not Recommended
Gas Shield Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended

Fabrication Properties provided by CDA

## THERMAL PROPERTIES

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature	500	260
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