



TYPICAL USES

Builders Hardware Structural Castings
Fasteners Nuts
Industrial Pump Impellers, Pump Parts, Valve Bodies,
 High Pressure Hydraulic Equipment, Bushings,
 Bearings, Gears, Piston Rings
Plumbing High Pressure Steam Equipment

Bronze Family: Leaded Tin Bronze
Solids: ½" to 13" OD
Tubes: 1" to 16" OD
Rectangles: Up to 20"
Standard Lengths: 144"

SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C92300	ASTM B505	81	SAE 621 SAE J461 SAE J462		QQ-C-390 B Type III QQ-B-1005 COMP. 6	230	MIL-B-11553 COMP. 6	LEADED "G" BRONZE

CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C92300	85.00- 89.00	7.50- 9.00	0.30- 1.00	2.50- 5.00	0.25	1.0*	0.25	1.5	0.05	0.005	N/A	0.005

Chemical Composition according to ASTM B505-08

Note: Single values represent maximums.

*In determining copper minimum, copper may be calculated as copper plus nickel.

MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
C92300	42	0.317

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			
40	276	19	131	16		

Mechanical Properties according to ASTM B505-08

PHYSICAL PROPERTIES

ALLOY: C92300 CONTINUED

	US Customary	Metric
Melting Point - Liquidus	1830 F	999 C
Melting Point - Solidus	1570 F	854 C
Incipient Melting	600 F	315 C
Density	0.317 lb/in ³ at 68 F	8.77 gm/cm ³ @ 20 C
Specific Gravity	8.770	8.77
Electrical Resistivity	85.90 ohms-cmil/ft @ 68 F	14.29 microhm-cm @ 20 C
Electrical Conductivity	12 %IACS @ 68 F	0.07 MegaSiemens/cm @ 20 C
Thermal Conductivity	43.20 Btu · ft/(hr · ft ² ·oF)at 68F	74.8 W/m · oK at 20 C
Coefficient of Thermal Expansion	10 ·10 ⁻⁶ per oF (68-392 F)	18.0 ·10 ⁻⁶ per oC (20-200 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	14000 ksi	96500 MPa

Physical Properties provided by CDA

FABRICATION PRACTICES

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
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