



TYPICAL USES

Architecture	Ornamental Castings
Building	Heating and Cooling Equipment
Fasteners	Nuts
Industrial	Cryogenic Valves, Valves for Water Meters, Medium Pressure Hydraulic Equipment, Valve Components, Pumps Used to 550 F, Pump Impellers, Fittings Used to 550 F, Gears, Piston Rings, Bushings, Bearings
Marine	Marine Castings
Plumbing	Medium Pressure Steam Equipment to 550 F

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
C92200	ASTM B505 ASTM B62	190	SAE J461 SAE J462		QQ-C-390 B Type III QQ-B-1005 COMP. 1	245	MIL-B-11553 COMP. 1 MIL-B-16541	NAVY “M” STEAM BRONZE

CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C92200	86.00- 90.00	5.50- 6.50	1.00- 2.00	3.00- 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.)
C92200	42	0.312

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			
38	262	19	131	18		

Mechanical Properties according to ASTM B505-08

PHYSICAL PROPERTIES

ALLOY: C92200 CONTINUED

	US Customary	Metric
Melting Point - Liquidus	1810 F	977 C
Melting Point - Solidus	1518 F	854 C
Incipient Melting	600 F	315 C
Density	0.332 lb/in ³ at 68 F	8.64 gm/cm ³ @ 20 C
Specific Gravity	8.640	8.64
Electrical Resistivity	72.50 ohms-cmil/ft @ 68 F	12.0 microhm-cm @ 20 C
Electrical Conductivity	140 %IACS @ 68 F	0.083 MegaSiemens/cm @ 20 C
Thermal Conductivity	40.20 Btu · ft/(hr · ft ² ·oF)at 68F	69.6 W/m · oK at 20 C
Coefficient of Thermal Expansion	10 ·10 ⁻⁶ per oF (68-572 F)	18.0 ·10 ⁻⁶ 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	14000 ksi	96500 MPa
Magnetic Permeability	1	1.0

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