TIN BRONZE C90500

CDA NUMBER	C90500	
Common Name	SAE 62, 88-10-2	
COMPOSITION PERCENT	**Min**	**Max**
Copper (Cu)	86	89
Tin (Sn)	9	11
Lead (Pb)		0.3
Zinc (Zn)	1	3
Iron (Fe)		0.2
Antimony (SB)		0.2
Nickel (Ni)		1
Sulphur (S)		0.05
Phosphorous (P)		0.05
Aluminum (Al)		0.005
Manganese (Mn)		
Silicon (Si)		0.005
Other (Total)		
Cu + Sum of Named Elements, 99.7% min..		
In determining Cu min., Cu may be calculated as Cu + Ni.		
Ni value includes Co.		
For continuous castings, P shall be 1.5%, max.		
NEAREST APPLICABLE CASTING STANDARDS		
ASTM (B Series)	B584	
SAE (J Series)	461, 462 (was 62)	
Federal (QQ-C- Series)	390	
Military (Mil-C- Series)		
TYPICAL PROPERTIES	**Typ**	**Min**
Tensile Strength (ksi)	46	40
Yield Strength (.5% extension under load) (ksi)	22	18
Elongation (2 inch gauge length) (%)	25	20
Reduction of Area (%)	40	
Proportional Limit (ksi)		
Modulus of Elasticity (ksi)	15000	
Hardness (Brinell) (HB @ 500kg)	75	
Machinability (% of free cutting brass)	35	
Fatigue Strength (10^8 cycles) (ksi)	13	
Impact Strength (Charpy) (ft-lb)		
Impact Strength (Izod) (ft-lb)	10	
Shear Strength (ksi)		
Compressive Strength (0.001 in. set/in.) (ksi)	15	
Compressive Strength (0.010 in. set/in.) (ksi)	44	
Compressive Strength (0.100 in. set/in.) (ksi)		
Creep Strength (0.00001% per hour) (ksi)		
Melting Range (Liquidus-Solidus)(F)	1570-1830	
Coefficient of Thermal Expansion (per F @ 68-400F)	0.000010	
Thermal Conductivity (Btu/sq.ft/ft./hr/F @ 68F)	43.2	
Specific Heat (Btu/lb/F @ 68F)	0.09	
Electrical Conductivity (% IACS @ 68F)	11	
Density (lb/cu.in. @ 68F)	0.315	
Pouring Temperature (Light Castings) (F)	2000-3000	
Pouring Temperature (Heavy Castings) (F)	1900-2100	
Patternmakers Shrinkage (in/ft)	3/16	
Drossing	Low	
Gassing	Medium	
Fluidity	Medium	

Corrosion Resistance: Excellent for most hydrocarbons, seawater, food products and some acids.
Wear Resistance: Excellent
Applications: Bearings, bushings, pump impellers, pump bodies, piston rings, valve components, steam fittings, gears, seal rings.

Always use the design principles outlined on page two of this information sheet or at our website.
Consult your foundry early in the design process.
We routinely pour and inventory this alloy.

St. Paul
Brass and Aluminum
Foundry

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