

# LEADED RED BRASS C93400

CDA NUMBER	C93400	
Common Name	84-8-8-0	
COMPOSITION PERCENT	Min	Max
Copper (Cu)	82	85
Tin (Sn)	7	9
Lead (Pb)	7	9
Zinc (Zn)		0.8
Iron (Fe)		0.2
Antimony (Sb)		0.5
Nickel (Ni)		1
Sulphur (S)		0.08
Phosphorous (P)		0.5
Aluminum (Al)		0.005
Maganese (Mn)		
Silicon (Si)		0.005
Cu + Sum of Named Elements, 99.0% 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)		
SAE (J Series)		
Federal (QQ-C- Series)		
Military (Mil-C- Series)		
TYPICAL PROPERTIES	Typ	Min
Tensile Strength (ksi)	32	25
Yield Strength (.5% extension under load) (ksi)	16	
Elongation (2 inch gauge length) (%)	20	8
Proportional Limit (ksi)	8	
Modulus of Elasticity (ksi)	11000	
Hardness (Brinell) (HB @ 500kg)	60	
Machinability (% of free cutting brass)	70	
Fatigue Strength (10 <sup>8</sup> cycles) (ksi)	15	
Impact Strength (Charpy) (ft-lb)		
Impact Strength (Izod) (ft-lb)	5	
Shear Strength (ksi)		
Compressive Strength (0.001 in. set/in.) (ksi)		
Compressive Strength (0.010 in. set/in.) (ksi)		
Compressive Strength (0.100 in. set/in.) (ksi)	48	
Creep Strength (0.00001% per hour) (ksi)		
Melting Range (Liquidus-Solidus)(F)	F	
Coefficient of Thermal Expansion (per F @ 68-400F)	.000010	
Thermal Conductivity (Btu/sq.ft/ft.hr/F @ 68F)	33.6	
Specific Heat (Btu/lb/F @ 68F)	.09	
Electrical Conductivity (% IACS @ 68F)	12	
Density (lb/cu.in. @ 68F)	.320	
Pouring Temperature (Light Castings) (F)		
Pouring Temperature (Heavy Castings) (F)		
Patternmakers Shrinkage (in/ft)	3/16	
Drossing	Low	
Gassing	Medium	
Fluidity	High	
Shrinkage	Low	
Casting Yield	High	
<b>Corrosion Resistance:</b> Very good for hydrocarbons, and general corrosion.		
<b>Applications:</b> Low-pressure valve bodies, water pump parts and impellers, electrical hardware, boat hardware, plumbing goods, valve trim, fire equipment, small gears, ornamental fixtures, hydraulic pressure castings, injectors, gas and vapor valves and fittings, hydraulic-pressure castings.		

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.

This is a high lead alloy. St Paul Brass and Aluminum does not offer it. We can offer low lead alternatives.



St. Paul  
Brass and Aluminum  
Foundry