

# LEADED RED BRASS C83400

CDA NUMBER	C83400	
Common Name	407.5	
COMPOSITION PERCENT	Min	Max
Copper (Cu)	88	92
Tin (Sn)	7	0.2
Lead (Pb)	7	0.5
Zinc (Zn)	8	12
Iron (Fe)		0.25
Antimony (SB)		0.25
Nickel (Ni)		1
Sulphur (S)		0.08
Phosphorous (P)		0.03
Aluminum (Al)		0.005
Maganese (Mn)		
Silicon (Si)		0.005
Cu + Sum of Named Elements, 99.3% min		
In determining Cu min., Cu may be calculated as Cu + Ni.		
Ni calue 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)	35	
Yield Strength (.5% extension under load) (ksi)	10	
Elongation (2 inch gauge length) (%)	30	
Reduction of Area (%)		
Proportional Limit (ksi)		
Modulus of Elasticity (ksi)	15000	
Hardness (Brinell) (HB @ 500kg)	F50	
Machinability (% of free cutting brass)	60	
Fatigue Strength (10 <sup>8</sup> cycles) (ksi)		
Impact Strength (Charpy) (ft-lb)		
Impact Strength (Izod) (ft-lb)		
Shear Strength (ksi)	26	
Compressive Strength (0.001 in. set/in.) (ksi)		
Compressive Strength (0.010 in. set/in.) (ksi)		
Compressive Strength (0.100 in. set/in.) (ksi)		
Creep Strength (0.00001% per hour) (ksi)		
Melting Range (Liquidus-Solidus)(F)	1910-1870	
Coefficient of Thermal Expansion (per F @ 68-400F)	.000010	
Thermal Conductivity (Btu/sq.ft/ft./hr/F @ 68F)	109	
Specific Heat (Btu/lb/F @ 68F)	.09	
Electrical Conductivity (% IACS @ 68F)	44	
Density (lb/cu.in. @ 68F)	.318	
Pouring Temperature (Light Castings) (F)		
Pouring Temperature (Heavy Castings) (F)		
Patternmakers Shrinkage (in/ft)	3/16	
Drossing	Low	
Gassing	Low	
Fluidity	Medium	
Shrinkage	Medium	
<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.

