

LEADED RED BRASS C83600

CDA NUMBER	C83600	
Common Name	85-5-5-5 or Red	
COMPOSITION PERCENT	Min	Max
Copper (Cu)	84	86
Tin (Sn)	4.0	6
Lead (Pb)	4	6
Zinc (Zn)	4	6
Iron (Fe)		0.3
Antimony (SB)		0.25
Nickel (Ni)		1
Sulphur (S)		0.08
Phosphorous (P)		0.05
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 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	
Federal (QQ-C- Series)	390	
Military (Mil-C- Series)	22229	
TYPICAL PROPERTIES	Typ	Min
Tensile Strength (ksi)	37	30
Yield Strength (.5% extension under load) (ksi)	17	14
Elongation (2 inch gauge length) (%)	30	20
Reduction of Area (%)	30	
Proportional Limit (ksi)		
Modulus of Elasticity (ksi)	13500	
Hardness (Brinell) (HB @ 500kg)	62	
Machinability (% of free cutting brass)	84	
Fatigue Strength (10 ⁸ cycles) (ksi)	11	
Impact Strength (Charpy) (ft-lb)	11	
Impact Strength (Izod) (ft-lb)	10	
Shear Strength (ksi)		
Compressive Strength (0.001 in. set/in.) (ksi)	14.4	
Compressive Strength (0.010 in. set/in.) (ksi)	17.4	
Compressive Strength (0.100 in. set/in.) (ksi)	37.5	
Creep Strength (0.00001% per hour) (ksi)	12.5 @ 350F	
Melting Range (Liquidus-Solidus)(F)	1568-1849	
Coefficient of Thermal Expansion (per F @ 68-400F)	0.0000101	
Thermal Conductivity (Btu/sq.ft/ft./hr/F @ 68F)	41.6	
Specific Heat (Btu/lb/F @ 68F)	0.09	
Electrical Conductivity (% IACS @ 68F)	15	
Density (lb/cu.in. @ 68F)	0.318	
Pouring Temperature (Light Castings) (F)	2100-2350	
Pouring Temperature (Heavy Castings) (F)	1950-2150	
Patternmakers Shrinkage (in/ft)	11/64	
Drossing	Low	
Gassing	Medium	
Fluidity	Medium	
Shrinkage	Medium	
Corrosion Resistance: Very good for hydrocarbons, and general corrosion.		
Applications: 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 alloy contains 5% lead. While we currently offer it, we recommend considering non leaded alternatives.



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