

LEADED RED BRASS C97600

CDA NUMBER	C97600	
Common Name	64-4-4-8-20	
COMPOSITION PERCENT	Min	Max
Copper (Cu)	63	67
Tin (Sn)	3.5	4.5
Lead (Pb)	3	5
Zinc (Zn)	3	9
Iron (Fe)		1.5
Antimony (Sb)		0.25
Nickel (Ni)	19	21.5
Sulphur (S)		0.08
Phosphorous (P)		0.05
Aluminum (Al)	.5	0.005
Maganese (Mn)		1
Silicon (Si)	.5	0.15
Cu + Sum of Named Elements, 99.7% min		
Ni value includes Co.		
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)	40	30
Yield Strength (.5% extension under load) (ksi)	24	17
Elongation (2 inch gauge length) (%)	20	8
Proportional Limit (ksi)		
Modulus of Elasticity (ksi)	19000	
Hardness (Brinell) (HB @ 500kg)	80	
Machinability (% of free cutting brass)	70	
Fatigue Strength (10 ⁸ cycles) (ksi)	15.5	
Impact Strength (Charpy) (ft-lb)	11	
Impact Strength (Izod) (ft-lb)		
Shear Strength (ksi)		
Compressive Strength (0.001 in. set/in.) (ksi)		
Compressive Strength (0.010 in. set/in.) (ksi)	30	
Compressive Strength (0.100 in. set/in.) (ksi)	57	
Creep Strength (0.00001% per hour) (ksi)	32.5	
Melting Range (Liquidus-Solidus)(F)	2089-2027	
Coefficient of Thermal Expansion (per F @ 68-400F)	.0000093	
Thermal Conductivity (Btu/sq.ft/ft.hr/F @ 68F)	13	
Specific Heat (Btu/lb/F @ 68F)	.09	
Electrical Conductivity (% IACS @ 68F)	5	
Density (lb/cu.in. @ 68F)	.321	
Pouring Temperature (Light Castings) (F)		
Pouring Temperature (Heavy Castings) (F)		
Patternmakers Shrinkage (in/ft)	1/8	
Drossing	Med. - High	
Gassing	Med. - High	
Fluidity	High	
Shrinkage	Medium	
Casting Yield	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.

St. Paul Brass and Aluminum does not currently pour this alloy, but will consider it if purchased volumes justify the inventory.



St. Paul
Brass and Aluminum
Foundry