

LEADED SEMI RED BRASS

CDA NUMBER	C84200		NR*		C844		NR*	
Common Name					81-3-7-9			
COMPOSITION PERCENT	Min	Max	Min	Max	Min	Max	Min	Max
Copper (Cu)	78.0	82.0	78.0	82.0	78.0	82.0	78.0	82.0
Tin (Sn)	4.0	6.0	4.0	6.0	2.3	3.5	2.3	3.5
Lead (Pb)	2.0	3.0	2.0	3.0	6.0	8.0	6.0	8.0
Zinc (Zn)	10.0	16.0	10.0	16.0	7.0	10.0	7.0	10.0
Iron (Fe)		0.35		0.35		0.35		0.35
Antimony (SB)						0.25		0.25
Nickel (Ni)		0.7		0.7		0.8		0.8
Sulphur (S)						0.08		0.08
Phosphorous (P)		0.05		0.05		0.02		0.02
Aluminum (Al)						0.005		0.005
Manganese (Mn)								
Silicon (Si)						0.005		0.005
Other (Total)								
NEAREST APPLICABLE CASTING STANDARDS								
ASTM (B Series)	B584				B584			
SAE (J Series)								
Federal (QQ-C- Series)	390				390			
Military (Mil-C- Series)								
TYPICAL PROPERTIES	Typ	Min	Typ	Min	Typ	Min	Typ	Min
Tensile Strength (ksi)	35	28	34	29	34	29	34	29
Yield Strength (.5% extension under load) (ksi)	14		14	13	14	13	14	13
Elongation (2 inch gauge length) (%)	27	15	28	18	28	18	28	18
Reduction of Area (%)					25			
Proportional Limit (ksi)								
Modulus of Elasticity (ksi)					13000			
Hardness (Brinell) (HB @ 500kg)	60		55		55		55	
Machinability (% of free cutting brass)	80		90		90		90	
Fatigue Strength (10 ⁸ cycles) (ksi)								
Impact Strength (Charpy) (ft-lb)								
Impact Strength (Izod) (ft-lb)					8			
Shear Strength (ksi)								
Compressive Strength (0.001 in. set/in.) (ksi)								
Creep Strength (0.00001% per hour) (ksi)								
Melting Range (Liquidus-Solidus)(F)	1540-1820				1540-1840			
Coefficient of Thermal Expansion (per F @ 68-400F)	.000010				0.000010			
Thermal Conductivity (Btu/sq.ft./ft./hr/F @ 68F)	41.8				41.9			
Specific Heat (Btu/lb/F @ 68F)	0.09				0.09			
Electrical Conductivity (% IACS @ 68F)	16.4				16.4			
Density (lb/cu.in. @ 68F)	0.311				0.314			
Pouring Temperature (Light Castings) (F)	2100-2300				2100-2300			
Pouring Temperature (Heavy Castings) (F)	1950-2150				1950-2150			
Patternmakers Shrinkage (in/ft)	3/16				3/16			
Drossing	Low				Medium			
Gassing	Medium				Medium			
Fluidity	Medium				Medium			
Shrinkage	Low				Medium			
Casting Yield	High				High			
Corrosion Resistance:	Very good in hydrocarbons and for general corrosion.							
Applications:	General hardware fittings, low pressure valves and fittings, ornamental castings, plumbing supplies and fixtures, stops and wastes, air and gas fittings, pump bodies.							

* Not Recommended



All mechanical properties listed are typical and not minimums. Always consult applicable specs and use good engineering judgment. Consult your foundry early in the design process.

St. Paul Brass and Aluminum Foundry

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