

COPPER NICKEL C96200

CDA NUMBER	C96200	
Common Name	90:10 Copper Nickel	
COMPOSITION PERCENT	Min	Max
Copper (Cu)	Rem.	
Tin (Sn)		
Lead (Pb)		0.01
Zinc (Zn)		
Iron (Fe)	1	1.8
Antimony (SB)		
Nickel (Ni)	9	11
Sulphur (S)		0.02
Phosphorous (P)		0.02
Carbon (C)		0.1
Manganese (Mn)		1.5
Silicon (Si)		0.5
Niobium (Nb)		1
Cu + Sum of Named Elements, 99.5% min.		
Ni value includes Co.		
When product or casting is intended for subsequent welding applications, and so specified by the purchaser, the Nb content shall be .40% max.		
NEAREST APPLICABLE CASTING STANDARDS		
ASTM (B Series)	B369	
SAE (J Series)		
Federal (QQ-C- Series)	390	
Military (Mil-C- Series)	20159	
TYPICAL PROPERTIES	Typ	Min
Tensile Strength (ksi)		45
Yield Strength (.5% extension under load) (ksi)		25
Elongation (2 inch gauge length) (%)		20
Reduction of Area (%)		
Proportional Limit (ksi)		
Modulus of Elasticity (ksi)	18000	
Hardness (Brinell) (HB @ 3000kg)		
Machinability (% of free cutting brass)	10	
Fatigue Strength (10 ⁸ cycles) (ksi)	13	
Impact Strength (Charpy) (ft-lb)	100	
Impact Strength (Izod) (ft-lb)		
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)	37	
Creep Strength (0.00001% per hour) (ksi)		
Melting Range (Liquidus-Solidus)(F)	2010-2100	
Coefficient of Thermal Expansion (per F @ 68-400F)	0.0000095	
Thermal Conductivity (Btu/sq.ft./ft./hr/F @ 68F)	26	
Specific Heat (Btu/lb/F @ 68F)	0.09	
Electrical Conductivity (% IACS @ 68F)	11	
Density (lb/cu.in. @ 68F)	0.323	
Pouring Temperature (Light Castings) (F)		
Pouring Temperature (Heavy Castings) (F)		
Patternmakers Shrinkage (in/ft)	3/16	
Drossing	Low	
Gassing	High	
Fluidity	High	
Shrinkage	High	
Casting Yield	Low	
Corrosion Resistance: Excellent.		
Wear Resistance: Very good.		
Applications: Valves, pump bodies, flanges, elbows. Used for seawater corrosion.		

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.

We routinely pour and inventory this alloy.



St. Paul
Brass and Aluminum
Foundry

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