C96200

Material Notes: Casting methods recommended for this alloy: Centrifugal and Sand.

Applications: Components of items, being used for sea water corrosion resistance.

Classified under: Copper-nickels

Properties for as-sand-cast separately cast test bars (M01 temper). Alloy does not respond to heat treating

Physical Properties	Metric	English	Comments
Density	8.94 g/cc	0.323 lb/in³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 310 MPa	>= 45000 psi	
Tensile Strength, Yield	>= 172 MPa	>= 24900 psi	
Elongation at Break	>= 20 %	>= 20 %	
Modulus of Elasticity	124 GPa	18000 ksi	
Compressive Strength	255 MPa	37000 psi	at 0.1 mm/mm set
Fatigue Strength	89.6 MPa @# of Cycles 1.00e+8	13000 psi @# of Cycles 1.00e+8	Reverse bend testing, as cast
Machinability	10 %	10 %	UNS C36000 (free-cutting brass) = 100%
Charpy Impact	135 J	99.6 ft-lb	V-notch

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000015674 ohm-cm @Temperature 20.0 °C	0.000015674 ohm-cm @Temperature 68.0 °F	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.376 J/g-°C	0.0899 BTU/lb-°F	
Thermal Conductivity	45.0 W/m-K @Temperature 20.0 °C	312 BTU-in/hr-ft²-°F @Temperature 68.0 °F	
Melting Point	1100 - 1150 °C	2010 - 2100 °F	
Solidus	1100 °C	2010 °F	
Liquidus	1150 °C	2100 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Copper, Cu	84.5 - 87 %	84.5 - 87 %	
Iron, Fe	1.0 - 1.8 %	1.0 - 1.8 %	
Lead, Pb	<= 0.030 %	<= 0.030 %	
Manganese, Mn	<= 1.5 %	<= 1.5 %	

Nickel, Ni	9.0 - 11 %	9.0 - 11 %
Niobium, Nb (Columbium, Cb)	<= 1.0 %	<= 1.0 %
Silicon, Si	<= 0.30 %	<= 0.30 %