C99400

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

Applications: Valve stems, marine and other uses requiring resistance to dezincifications and dealuminification, propeller wheels, electrical parts, mining equipment gears.

Physical Properties	Metric	English	Comments
Density	8.30 g/cc	0.300 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	125	125	M01 temper; 3000 kg
	170	170	TF00 temper; 3000 kg
Tensile Strength, Ultimate	455 MPa	66000 psi	M01 temper
	545 MPa	79000 psi	TF00 temper
Tensile Strength, Yield	235 MPa @Strain 0.500 %	34100 psi @Strain 0.500 %	M01 temper
	370 MPa @Strain 0.500 %	53700 psi @Strain 0.500 %	TF00 temper
Elongation at Break	25 %	25 %	in 50 mm, M01 temper
Modulus of Elasticity	133 GPa	19300 ksi	
Machinability	50 %	50 %	UNS C36000 (free-cutting brass) = 100%
Shear Strength	330 MPa	47900 psi	M01 temper

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000102625 ohm-cm @Temperature 20.0 °C	0.0000102625 ohm-cm @Temperature 68.0 °F	TF00 temper

Processing Properties	Metric	English	Comments
Annealing Temperature	315 °C	599 °F	Stress-Relieving Temperature; 1 h for each 25 mm of section thickness
Solution Temperature	885 °C	1630 °F	1 h for each 25 mm of section thickness
Aging Temperature	480 °C	896 °F	1 hour

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.50 - 2.0 %	0.50 - 2.0 %	
Copper, Cu	90.4 %	90.4 %	
Iron, Fe	1.0 - 3.0 %	1.0 - 3.0 %	
Lead, Pb	<= 0.25 %	<= 0.25 %	
Manganese, Mn	<= 0.50 %	<= 0.50 %	
Nickel, Ni	1.0 - 3.5 %	1.0 - 3.5 %	

Silicon, Si	0.50 - 2.0 %	0.50 - 2.0 %
Zinc, Zn	0.50 - 5.0 %	0.50 - 5.0 %