

White Manganese Brass, UNS C99700, Copper Casting Alloy

Categories: [Metal](#); [Nonferrous Metal](#); [Copper Alloy](#); [Copper Casting Alloy](#)

Material

Notes: Casting methods recommended for this alloy: Centrifugal, Die, Investment, Permanent Mold, Plaster, and Sand.

Typical data for separately cast test bars. Alloy does not respond to heat treating

Vendors: [Click here to view all available suppliers for this material.](#)

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Physical Properties	Metric	English	Comments
Density	8.19 g/cc	0.296 lb/in ³	
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	110	110	3000 kg, sand cast
	125	125	3000 kg, die cast
Tensile Strength, Ultimate	380 MPa	55100 psi	sand cast
	450 MPa	65300 psi	die cast
Tensile Strength, Yield	170 MPa	24700 psi	0.5% extension under load, sand cast
	185 MPa	26800 psi	0.5% extension under load, die cast
Elongation at Break	15.0 %	15.0 %	in 50 mm, die cast
	25.0 %	25.0 %	in 50 mm, sand cast
Modulus of Elasticity	114 GPa	16500 ksi	
Machinability	80 %	80 %	UNS C36000 (free-cutting brass) = 100%
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00005747 ohm-cm @Temperature 20.0 °C	0.00005747 ohm-cm @Temperature 68.0 °F	
Thermal Properties	Metric	English	Comments
Melting Point	880 - 900 °C	1620 - 1650 °F	
Solidus	880 °C	1620 °F	
Liquidus	900 °C	1650 °F	
Processing Properties	Metric	English	Comments
Annealing Temperature	0.000 °C	32.0 °F	Stress-Relieving Temperature
Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.50 - 3.0 %	0.50 - 3.0 %	
Copper, Cu	>= 54.0 %	>= 54.0 %	
Iron, Fe	<= 1.0 %	<= 1.0 %	
Lead, Pb	<= 2.0 %	<= 2.0 %	
Manganese, Mn	11.0 - 15.0 %	11.0 - 15.0 %	
Nickel, Ni	4.0 - 6.0 %	4.0 - 6.0 %	
Tin, Sn	<= 1.0 %	<= 1.0 %	
Zinc, Zn	19.0 - 25.0 %	19.0 - 25.0 %	

[References](#) for this datasheet.

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's disclaimer and terms of use regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.