



# Rheocast™ Company

Brass and Aluminum Die Casting Specialists

## C85700 BRASS ALLOY PROPERTIES

### Chemical Properties

Elements	Cu <sup>(1)</sup>	Al	Fe	Pb	Ni <sup>(2)</sup>	Si	Sn	Zn
%Min.	58.00	-	-	0.80	-	-	0.50	32.00
%Max.	64.00	0.80	0.70	1.50	1.00	0.05	1.50	40.00
%Nominal	61.00	0.30	-	1.00	-	-	1.00	36.00

<sup>(1)</sup> In determining Cu Min: Cu may be calculated as Cu + Ni

<sup>(2)</sup> Ni value includes Co

Note: Cu + Sum of Named Elements: 98.7% Min.

### Applicable Specifications

Die Cast ASTM B176

Ingot ASTM B30

### Fabrication Properties

Joining Technique	Suitability
Soldering	Good
Brazing	Fair
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Machinability Rating	80

### Mechanical Properties

As	Temper	Temp	Tensile Strength	Yield Strength (0.5% ext. under load)	EI %	Brinell Hardness
		°F	ksi	ksi		
		°C	MPa	MPa		
Sand Cast	S-Max	M01	68	-	-	-
	S-Max		20	-	-	-
	S-Min	M01	68	40	15	-
	S-Min		20	276	15	-
	Typical	M01	68	50	18	40
	Typical		20	345	124	40

### Physical Properties

Specific Gravity	8.41
Density	0.304 lb/in <sup>3</sup> at 68°F
Melting Point - Solidus	1,675°F
Melting Point - Liquidus	1,725°F
Electrical Resistivity	47.0 ohms/cmil/ft at 68°F
Electrical Conductivity	22% IACS at 68°F
Thermal Conductivity	48.5 Btu/ft/(hr/ft <sup>2</sup> /°F) at 68°F
Coefficient of Thermal Expansion	12.0 x 10 <sup>-6</sup> per °F (68°F - 572°F)
Specific Heat Capacity	0.09 Btu/lb/°F at 68°F
Modulus of Elasticity in Tension	14,000 ksi
Magnetic Permeability	1.0

### Typical Uses

Builders Hardware  
 Window Hardware, Door Hardware, Ornamental Hardware  
 Consumer  
 Musical Instruments  
 Marine  
 Ship Trim, Marine Hardware  
 Industrial  
 Mechanical Components where Aesthetics are Important  
 High-Strength, Thin Walled Die Castings  
 Plumbing  
 Fittings, Flanges, Hexagonal Nuts

**Tempers Most Commonly Used:** No information available

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Sources: ASTM, SAE, Copper Development Association

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