

C86700

Continuous Cast

Product Description:	Manganese Bronze
Solids:	½" to 13" O.D.
Tubes:	1⅝" to 16" O.D.
Rectangles:	Up to 20"
Standard Lengths:	144"
Shape/Form:	semi-finished, mill stock or near-net shapes, anode, bar stock, billet/bloom, squares, hex, plate, profile or structural shape, flats/rectangular bar

Typical Uses

Builders Hardware	brackets
Fasteners	screw down nuts
Industrial	bearings, cams, fittings, lever arms, machinery parts, moderate-duty gears, propellers, valve stems
Marine	marine hardware, propellers

Chemical Composition

Cu% ¹	Pb%	Sn%	Zn%	Fe%	Ni% ²	Al%	Mn%
55.00- 60.00	0.50- 1.50	1.50	30.00- 38.00	1.00- 3.00	1.00	1.00- 3.00	0.10- 3.50

Chemical Composition provided by CDA

¹In determining Cu min., Cu may be calculated as Cu + Ni. ²Ni value includes Co.
Note: Cu + Sum of Named Elements, 99.0% min. Single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 ° F)
C86700	55	0.301

Mechanical Properties

Tensile Strength, typ		Yield Strength, at 0.5% Extension Under Load, typ		Elongation, in 2 in. or 50 mm typ	Brinell Hardness (3000 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
85	586	42	290	20	155	

Mechanical Properties provided by CDA

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1616 °F	880 °C
Melting Point – Solidus	1583 °F	862 °C
Density	0.301 lb/in ³ at 68 °F	8.33 gm/cm ³ at 20 °C
Specific Gravity	8.33	8.33
Electrical Conductivity	17% IACS at 68 °F	0.097 MegaSiemens/cm at 20 °C
Coefficient of Thermal Expansion 68-392	11 · 10 ⁻⁶ per °F (68-392 °F)	19 · 10 ⁻⁶ per °C (20-200 °C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68 °F	377.1 J/kg at 20 °C
Modulus of Elasticity in Tension	15000 ksi	103422 MPa

Physical Properties provided by CDA

Fabrication Properties

Technique	Suitability
Soldering	Fair
Brazing	Fair
Oxyacetylene Welding	Poor
Gas Shielded Arc Welding	Poor
Coated Metal Arc Welding	Poor
Machinability Rating	55

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Value*	Time**
Stress Relief	500	
Solution Treatment		0

Thermal Properties provided by CDA

*Temperature is measured in Fahrenheit. **For Stress Relief, Solution Treatment and Annealing - Time is measured in hours/inch of thickness. For Precipitation Heat Treatment - Time is measured in hours.