

C85700

Continuous Cast

Product Description:	Leaded Yellow Brass
Solids:	½" to 13" O.D.
Tubes:	1⅝" to 9" O.D.
Rectangles:	Up to 15"
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	door hardware for prisons, ornamental hardware, window hardware
Consumer	musical instruments
Industrial	mechanical components where aesthetics are important
Marine	marine hardware, ship trim
Plumbing	fittings, flanges

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C85700	B505 B505M B271 B271M B176					

Chemical Composition

Cu% ¹	Pb%	Sn%	Zn%	Fe%	Ni% ^{1,2}	Al%	Si%
58.00- 64.00	0.80- 1.50	0.50- 1.50	32.00- 40.00	0.70	1.00	0.80	0.05

Chemical Composition according to ASTM B505/B505M-18

¹In determining Cu min., Cu may be calculated as Cu + Ni.
Note: Single values represent maximums.

²Ni value includes Co.



Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 ° F)
C85700	80	0.304

Mechanical Properties

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness (500 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
40	276	14	97	15	75	

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1725 ° F	941 ° C
Melting Point – Solidus	1675 ° F	913 ° C
Density	0.304 lb/in ³ at 68 ° F	8.41 gm/cm ³ at 20 ° C
Specific Gravity	8.41	8.41
Electrical Conductivity	22% IACS at 68 ° F	0.128 MegaSiemens/cm at 20 ° C
Thermal Conductivity	48.5 Btu/sq ft/ft hr/° F at 68 ° F	83.9 W/m at 20 ° C
Coefficient of Thermal Expansion 68-572	12 · 10 ⁻⁶ per ° F (68-572 ° F)	20.7 · 10 ⁻⁶ per ° C (20-300 ° C)
Specific Heat Capacity	0.09 Btu/lb/° F at 68 ° F	377.1 J/kg at 20 ° C
Modulus of Elasticity in Tension	14000 ksi	87000 MPa
Magnetic Permeability	1	1

Physical Properties provided by CDA

Fabrication Properties

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

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.