

# C85700

## Continuous cast

Product description	Leaded yellow brass
Solids	1/2" to 13" O.D.
Tubes	1 1/8" 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 (%) <sup>1</sup>	Pb (%)	Sn (%)	Zn (%)	Fe (%)	Ni (%) <sup>1,2</sup>	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-23

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

<sup>2</sup>Ni value includes Co.

## C85700 continued

### Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in <sup>3</sup> 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-23

### Physical properties

	US customary	Metric
Melting point – liquidus	1725 °F	941 °C
Melting point – solidus	1675 °F	913 °C
Density	0.304 lb/in <sup>3</sup> at 68 °F	8.41 gm/cm <sup>3</sup> 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 <sup>-6</sup> per °F (68-572 °F)	20.7 · 10 <sup>-6</sup> 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

### Casting characteristics

Casting attribute	Level
Casting yield	Medium
Drossing	High
Effect of section size	Low
Fluidity	Medium
Gassing	Low
Patternmakers shrinkage (inches per foot)	3/16
Shrinkage in solidification	Medium

Casting characteristics provided by CDA