

# C92700

## Continuous cast

Product description	Leaded tin bronze
Solids	1/2" to 13" O.D.
Tubes	1" 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

### Fasteners

Lead screw nuts

### Industrial

Bearings, bushings, gears, heavy-duty bearings, pump impellers, pump pistons, steam fittings

## Similar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C92700	B505 B505M	63 J461 J462				

## Chemical composition

Cu (%) <sup>1</sup>	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%) <sup>1,2</sup>	Al (%)	S (%)	Sb (%)	Si (%)
86.00-89.00	1.00-2.50	9.00-11.00	0.70	0.20	1.50	1.00	0.005	0.05	0.25	0.005

Chemical composition according to ASTM B505/B505M-23

<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, 99.3% min. Single values represent maximums.

## Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in <sup>3</sup> at 68 ° F)
C92700	45	0.317

## 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	
38	252	20	138	8	77	

Mechanical properties according to ASTM B505/B505M-23

## Physical properties

	US customary	Metric
Melting point – liquidus	1800 °F	982 °C
Melting point – solidus	1550 °F	843 °C
Density	0.317 lb/in <sup>3</sup> at 68 °F	8.78 gm/cm <sup>3</sup> at 20 °C
Specific gravity	8.78	8.78
Electrical conductivity	11% IACS at 68 °F	0.064 MegaSiemens/cm at 20 °C
Thermal conductivity	27.2 Btu/sq ft/ft hr/°F at 68 °F	47 W/m at 20 °C
Coefficient of thermal expansion 68-392	10 · 10 <sup>-6</sup> per °F (68-392 °F)	17.3 · 10 <sup>-6</sup> 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	16000 ksi	110000 MPa
Incipient melting	600 °F	316 °C

Physical properties provided by CDA

## Fabrication properties

Technique	Suitability
Soldering	Excellent
Brazing*	Good
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Not recommended
Coated metal arc welding	Not recommended
Machinability rating	45

Fabrication properties provided by CDA

\*Since brazing is performed within the hot-short range, strain must be avoided during brazing and cooling.

## Casting characteristics

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

Casting characteristics provided by CDA