C92900

Continuous cast	
Product description	Leaded nickel-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

Industrial

Cams, gears, general-service bearings, impellers for mine water, pump bodies, wear plates, worm gears

Similiar or equivalent specification						
CDA	ASTM	SAE	AMS	Federal	Military	Other
C92900	B505 B505M					

Chemical composition										
Cu (%)[1]	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%)[1,2]	Al (%)	S (%)	Sb (%)	Si (%)
82.00-86.00	2.00-3.20	9.00-11.00	0.25	0.20	1.50	2.80-4.00	0.005	0.05	0.25	0.005

Chemical composition according to ASTM B505/B505M-23

[1]In determining Cu min., Cu may be calculated as Cu + Ni. [2]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^3 at 68 $^\circ$F)
C92900	40	0.32

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	
45	310	25	172	8	75	

Mechanical properties according to ASTM B505/B505M-23

Physical properties

	US customary	Metric
Melting point – liquidus	1887˚F	1031˚C
Melting point – solidus	1575˚F	857˚C
Density	0.32 lb/in³ at 68˚F	8.86 gm/cm³ at 20˚C
Specific gravity	8.86	8.86
Electrical conductivity	9% IACS at 68˚F	0.053 MegaSiemens/cm at 20˚C
Thermal conductivity	33.6 Btu/sq ft/ft hr/˚F at 68˚F	58.2 W/m at 20˚C
Coefficient of thermal expansion 68-392	9.5 · 10^{-6} per˚F (68-392˚F)	16.4 · 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
Modulas of elasticity in tension	14000 ksi	96500 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	40

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	High
Gassing	Medium
Patternmakers shrinkage (inches per foot)	3/16
Shrinkage in solidification	Low

Casting characteristics provided by CDA