C92300

Cast

Product Description:	Leaded Tin Bronze
Solids:	½" 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

Builders Hardware	structural castings
Fasteners	nuts
Industrial	pump impellers, pump parts, valve bodies, high-pressure hydraulic equipment, bushings, bearings, gears, piston rings
Plumbing	high-pressure steam equipment

Similar or Equivalent Specification

CDA	ASTM	Asarcon	SAE	AMS	Federal	Military	Other
C92300	B505 B505M B143-2B	81	621 J461 J462		QQ-C-390, D3 QQ-B-1005, COMP 6	MIL-B-11553, COMP 6	

Chemical Composition

Cu%[1]	Pb%	Sn%	Zn%	Fe%	P%[2]	Ni%[3]	Al%	S%	Sb%	Si%
85.00-89.00	0.30-1.00	7.50-9.00	2.50-5.00	0.25	0.05	1.00	0.005	0.05	0.25	0.005

Chemical Composition according to ASTM B505/B505M-18

[1]In determining Cu min., Cu may be calculated as Cu + Ni. [2]For continuous castings, P shall be 1.5% max. [3]Ni value includes Co.
Note: Cu + Sum of Named Elements, 99.3% min. Single values represent maximums.

CONCAST METAL PRODUCTS CO.

P.O. Box 816 • Mars, PA 16046 • Phone (724) 538-4000 • Toll Free (800) 626-7071 • Fax (724) 538-3956

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/cu in at 68° F)
C92300	42	0.317

Mechanical Properties

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
40	276	19	131	16	70 (500 kg)	

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1830° F	999° C
Melting Point – Solidus	1570° F	854° C
Incipient Melting	600° F	315° C
Density	0.317 lb/in^3 at 68° F	8.77 gm/cm^3 at 20° C
Specific Gravity	8.77	8.77
Electrical Conductivity	12% IACS at 68° F	0.07 MegaSiemens/cm at 20° C
Thermal Conductivity	43.20 Btu · ft/(hr · ft^2 · °F) at 68° F	74.8 W/m at 20° C
Coefficient of Thermal Expansion	10 · 10^{-6} per °F (68°-392° F)	17.3 · 10^{-6} per °C (20°-200° C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68° F	377.1 J/kg at 293° C
Modulas of Elasticity in Tension	14000 ksi	96500 MPa

Physical Properties provided by CDA

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature	500	260
Solution Minimum		
Solution Maximum		
Solution Time	0.0	
Solution Medium		
Precipitation Value		
Precipitation Time		
Precipitation Medium		
Annealing Minimum		
Annealing Maximum		
Annealing Time		
Hot Treatment Minimum		
Hot Treatment Maximum		

Thermal Properties provided by CDA

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