C93400

Cast

Product Description:	High-Leaded Tin Bronze
Solids:	½" to 13" OD
Tubes:	1" to 16" OD
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	washers
Industrial	thrust bearings, bushings, corrosion-resistant castings, bearings, slide bars, pump impellers

Similar or Equivalent Specification

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	MILITARY	OTHER
C93400	B505 B505M	88			QQ-C-390, E8 QQ-B-1005, COMP 8	MIL-B-11553, COMP 8	

Chemical Composition

Cu%[1]	Pb%	Sn%	Zn%	Fe%	P%[2]	Ni%[3]	Al%	S%	Sb%	Si%
82.00- 85.00	7.00- 9.00	7.00- 9.00	0.80	0.20	0.50	1.00	0.005	0.08	0.50	0.005

Chemical Composition according to ASTM B505/B505M-14

[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, 99.0% min. Single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/cu in at 68° F)
C93400	70	0.320

CONCAST METAL PRODUCTS CO.

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

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	
34	234	20	138	8	60 (500 kg)	

Mechanical Properties according to ASTM B505/B505M-14

Physical Properties

	US Customary	Metric
Density	0.320 lb/in^3 at 68˚ F	8.86 gm/cm^3 at 20˚ C
Specific Gravity	8.86	8.86
Electrical Conductivity	12% IACS at 68˚ F	0.07 MegaSiemens/cm at 20˚ C
Thermal Conductivity	33.60 Btu · ft/(hr · ft^2 · ˚F) at 68˚ F	58.2 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	11000 ksi	75800 MPa

Physical Properties provided by CDA

Fabrication Properties

Joining Technique	Suitability
Soldering	Good
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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