

C94300

Cast

| | |
|-----------------------------|---|
| Product Description: | High-Leaded Tin Bronze |
| Solids: | ½" to 10" O.D. |
| Tubes: | 1" to 16" O.D. |
| Rectangles: | Up to 10" |
| 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 high-speed bearings for light loads, soft bushings, soft metal applications, railroad applications, high-speed/light-to-medium pressure bushings

Similar or Equivalent Specification

| CDA | ASTM | Asarcon | SAE | AMS | Federal | Military | Other |
|--------|---------------|---------|-----|-----|------------------------------------|----------------------|-------------|
| C94300 | B505 B505M | 520 | | | QQ-C-390, E1 QQ-B-1005, COMP 18 | MIL-B-16261, GRADE V | Soft Bronze |

Chemical Composition

| Cu% | Pb% | Sn% | Zn% | Fe% | P% ¹ | Ni% ² | Al% | S% ³ | Sb% | Si% |
|-----------------|-----------------|---------------|------|------|-----------------|------------------|-------|-----------------|------|-------|
| 67.00- 72.00 | 23.00- 27.00 | 4.50- 6.00 | 0.80 | 0.15 | 0.08 | 1.00 | 0.005 | 0.08 | 0.80 | 0.005 |

Chemical Composition according to ASTM B505/B505M-18

¹For continuous castings, P shall be 1.5% max.

²Ni value includes Co.

³For continuous castings, S shall be 0.25% max.

Note: Cu + Sum of Named Elements, 99.0% min. Single values represent maximums.

Machinability

| Alloy | Machinability Rating | Density (lb/cu in at 68° F) |
|--------|----------------------|-----------------------------|
| C94300 | 80 | 0.336 |



Mechanical Properties

C94300 continued

| 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 | |
| 21 | 145 | 15 | 103 | 7 | 45 (500 kg) | |

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

| | US Customary | Metric |
|----------------------------------|--|---------------------------------|
| Incipient Melting | 600° F | 316° C |
| Density | 0.336 lb/in ³ at 68° F | 9.3 gm/cm ³ at 20° C |
| Specific Gravity | 9.3 | 9.3 |
| Electrical Conductivity | 9% IACS at 68° F | 0.053 MegaSiemens/cm at 20° C |
| Thermal Conductivity | 36.2 Btu · ft/(hr · ft ² · °F) at 68° F | 62.7 W/m at 20° C |
| Specific Heat Capacity | 0.09 Btu/lb/°F at 68° F | 377.1 J/kg at 293° C |
| Modulus of Elasticity in Tension | 10500 ksi | 72400 MPa |
| Magnetic Permeability | 1 | 1 |

Physical Properties provided by CDA

Fabrication Properties

| Joining Technique | Suitability |
|--------------------------|-----------------|
| Soldering | Good |
| Brazing | Poor |
| 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

