

C92700

Continuous 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

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% ¹ | Pb% | Sn% | Zn% | Fe% | P% | Ni% ^{1,2} | 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-18

¹In determining Cu min., Cu may be calculated as Cu + Ni. ²Ni 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 ° 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-18

Physical Properties

| | US Customary | Metric |
|---|--|--|
| Melting Point – Liquidus | 1800 °F | 982 °C |
| Melting Point – Solidus | 1550 °F | 843 °C |
| Density | 0.317 lb/in ³ at 68 °F | 8.78 gm/cm ³ 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 ⁻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 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.

Thermal Properties

| Treatment | Value* | Time** |
|--------------------|--------|--------|
| Stress Relief | 500 | |
| Solution Treatment | | 0 |

Thermal Properties provided by CDA

*Temperature is measured in Fahrenheit. **For Stress Relief, Solution Treatment and Annealing - Time is measured in hours/inch of thickness. For Precipitation Heat Treatment - Time is measured in hours.