



C44300 STANDARDS & USES

Some of the following data is available from the copper data center at copper.org. The information below is also from that website as well as public knowledge about this alloy.

Chemical Composition (%max., unless shown as range or min.)

| | Cu | As | Fe | Pb | Sn ⁽¹⁾ | Zn |
|------------------|-----------|---------|-----|-----|-------------------|------|
| Min./Max. | 70.0-73.0 | .02-.06 | .06 | .07 | .8-1.2 | Rem. |
| Nominal | 71.0 | .04 | - | - | 1.0 | 28.0 |

(1) For tubular products, the minimum Sn content may be .9%.
Note: Cu + Sum of Named Elements, 99.6% min.

Applicable Specifications

| Product | Specification |
|-----------------------|-------------------------|
| Plate, Condenser Tube | ASME SB171 ASTM B171 |
| Tube | ASTM B135 |
| Tube, Condenser | ASME SB111 ASTM B111 |
| Tube, Finned | ASME SB359 ASTM B359 |
| Tube, U-Bend | ASME SB395 ASTM B395 |
| Tube, Welded | ASME SB543 ASTM B543 |

Fabrication Properties

| Joining Technique | Suitability |
|--------------------------------|-----------------|
| Soldering | Excellent |
| Brazing | Excellent |
| Oxyacetylene Welding | Good |
| Gas Shielded Arc Welding | Fair |
| Coated Metal Arc Welding | Not Recommended |
| Spot Weld | Good |
| Seam Weld | Not Recommended |
| Butt Weld | Good |
| Capacity for Being Cold Worked | Excellent |
| Capacity for Being Hot Formed | Fair |
| Machinability Rating | 30 |

Physical Properties

| | US Customary | Metric |
|----------------------------------|--|---|
| Melting Point - Liquidus | 1720 F | 938 C |
| Melting Point - Solidus | 1650 F | 899 C |
| Density | 0.308 lb/in ³ at 68 F | 8.53 gm/cm ³ @ 20 C |
| Specific Gravity | 8.53 | 8.53 |
| Electrical Resistivity | 41.5 ohms-cmil/ft @ 68 F | 6.9 microhm-cm @ 20 C |
| Electrical Conductivity | 25 %IACS @ 68 F | 0.146 MegaSiemens/cm @ 20 C |
| Thermal Conductivity | 64.0 Btu · ft/(hr · ft ² ·°F)at 68F | 110.8 W/m · °K at 20 C |
| Coefficient of Thermal Expansion | 11.2 · 10 ⁻⁶ per °F (68-572 F) | 20.2 · 10 ⁻⁶ per °C (20-300 C) |
| Specific Heat Capacity | 0.09 Btu/lb/°F at 68 F | 377.1 J/kg · °K at 293 K |
| Modulus of Elasticity in Tension | 16000 ksi | 110000 MPa |
| Modulus of Rigidity | 6000 ksi | 41370 MPa |

Typical Uses

| INDUSTRY | APPLICATION |
|--|---|
| INDUSTRIAL: Power plants, Pulp/Paper processing, Oil and Gas Refining, Plastics plants, etc. | <ul style="list-style-type: none">• Bourdon Tubes• Condenser Tubes• Distiller Tubes• Evaporator Tubes• Ferrules• Heat Exchanger Tubes• Oil Well Pump Liners |
| PLUMBING | <ul style="list-style-type: none">• Strainers |