



## C70600 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.)

	<b>Cu<sup>(1)</sup></b>	<b>Fe</b>	<b>Pb</b>	<b>Mn</b>	<b>Ni<sup>(2)</sup></b>	<b>Zn</b>
<b>Min./Max.</b>	Rem.	1.0-1.8	.05	1.0	9.0-11.0	1.0
<b>Nominal</b>	88.6	1.4	-	-	10.0	-

(1) Cu value includes Ag.

(2) Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.5% min.

### **Applicable Specifications**

<b>Product</b>	<b>Specification</b>
Pipe, Seamless	ASME SB466, ASTM B466
Plate, Condenser Tube	ASME SB171, ASTM B171 SAE J463, J461
Tube, Condenser	ASME SB111 ASTM B552, B111 MILITARY MIL-T-15005 SAE J463, J461
Tube, Finned	ASME SB359, ASTM B359 MILITARY MIL-T-22214
Tube, Seamless	ASME SB466, ASTM B466, B469 MILITARY MIL-T-16420
Tube, U-Bend	ASME SB395 ASTM B395

## Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Good
Spot Weld	Good
Seam Weld	Good
Butt Weld	Excellent
Capacity for Being Cold Worked	Good
Capacity for Being Hot Formed	Good
Machinability Rating	20

## Physical Properties

	US Customary	Metric
Melting Point - Liquidus	2100 F	1149 C
Melting Point - Solidus	2010 F	1099 C
Density	0.323 lb/in <sup>3</sup> at 68 F	8.94 gm/cm <sup>3</sup> @ 20 C
Specific Gravity	8.94	8.94
Electrical Resistivity	115.0 ohms-cmil/ft @ 68 F	19.12 microhm-cm @ 20 C
Electrical Conductivity	9 %IACS @ 68 F	0.053 MegaSiemens/cm @ 20 C
Thermal Conductivity	26.0 Btu · ft/(hr · ft <sup>2</sup> ·°F)at 68F	45.0 W/m · °K at 20 C
Coefficient of Thermal Expansion	9.5 · 10 <sup>-6</sup> per °F (68-572 F)	17.1 · 10 <sup>-6</sup> 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	18000 ksi	124000 MPa
Modulus of Rigidity	6800 ksi	46880 MPa

## Typical Uses

INDUSTRY	APPLICATION
Automotive	<ul style="list-style-type: none"><li>• Power steering tube</li><li>• Brake lines</li></ul>
Consumer	<ul style="list-style-type: none"><li>• Screw lamp bases</li></ul>
Industrial	<ul style="list-style-type: none"><li>• Condensers</li><li>• Weld torch tips</li><li>• Heat Exchanger Tubes</li><li>• Valve Bodies</li><li>• Evaporator tubes</li><li>• Pressure Vessels</li><li>• Distiller Tubes</li><li>• Pump Impellers for Oil Refining</li><li>• Ferrules</li><li>• Evaporators</li></ul>
Marine	<ul style="list-style-type: none"><li>• Salt water pipe fittings</li><li>• Salt water piping</li><li>• Hot water tanks</li><li>• Salt water baffles</li><li>• Propeller sleeves</li><li>• Water hoses</li></ul>
Plumbing	<ul style="list-style-type: none"><li>• Flanges</li></ul>