



## C71500 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 <sup>(1)</sup>	Fe	Pb	Mn	Ni <sup>(2)</sup>	Zn
<b>Min./Max.</b>	Rem.	.40-1.0	.05	1.0	29.0-33.0	1.0
<b>Nominal</b>	69.5	.50	-	-	30.0	-

(1) Cu value includes Ag.

(2) Ni value includes Co.

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

### **Applicable Specifications**

Product	Specification
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 MILITARY MIL-T-16420
Tube, U-Bend	ASME SB395, ASTM B395

## Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Excellent
Spot Weld	Excellent
Seam Weld	Excellent
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	2260 F	1238 C
Melting Point - Solidus	2140 F	1171 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	225.0 ohms-cmil/ft @ 68 F	37.4 microhm-cm @ 20 C
Electrical Conductivity	4 % IACS @ 68 F	0.027 MegaSiemens/cm @ 20 C
Thermal Conductivity	17.0 Btu · ft/(hr · ft <sup>2</sup> · °F) at 68F	29.4 W/m · °K at 20 C
Coefficient of Thermal Expansion	9.0 · 10 <sup>-6</sup> per °F (68-572 F)	16.2 · 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	22000 ksi	152000 MPa
Modulus of Rigidity	8300 ksi	57230 MPa

## Typical Uses

INDUSTRY	APPLICATION
Industrial	<ul style="list-style-type: none"><li>• Pump impellers</li><li>• Heat Exchanger tubes</li><li>• Evaporator tubes</li><li>• Distiller tubes</li><li>• Refrigerators</li><li>• Process equipment</li><li>• Condenser components</li><li>• Ferrules</li><li>• Flexible metal hose</li><li>• Boiler parts</li><li>• Condensers</li><li>• Heat exchanger components</li></ul>
Marine	<ul style="list-style-type: none"><li>• Salt water flanges</li><li>• Salt water piping</li><li>• Valve bodies</li><li>• Sea water service</li><li>• Fittings</li><li>• Sea water condensers</li><li>• Salt water pipe fittings</li><li>• Water boxes – salt water</li><li>• Pump bodies</li></ul>