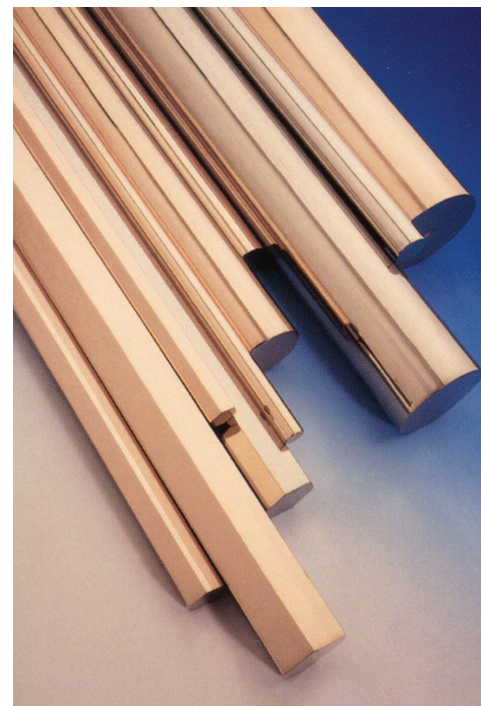


C70600, C71500 COPPER NICKEL “90/10” & “70/30”

OFFERED IN SOLID BARS, TUBES AND PLATES



C70600 & C71500, Copper nickel offers excellent corrosion resistance, especially in marine salt water environments. The main, wrought copper-nickel alloys chosen for sea water service contain 10 or 30 percent nickel. They also have important additions of iron and manganese which are necessary to maintain good corrosion resistance. Some common applications for copper nickel include: valves, pump components, fittings, flanges and various other marine hardware components.

TYPICAL USES FOR C70600

Automotive

Power Steering Tube, Brake Lines

Consumer

Screw Lamp Bases

Industrial

Condenser Plates, Condensers, Weld Torch Tips, Heat Exchanger Tubes, Valve Bodies, Evaporator Tubes, Pressure Vessels, Distiller Tubes, Pump Impellers for Oil Refining, Ferrules, Evaporators

Marine

Boat Hulls, Tube Sheet for Salt Water Service, Salt Water Pipe Fittings, Salt Water Piping Systems, Salt Water Piling Wrap, Hot Water Tanks, Salt Water Baffles, Propeller Sleeves, Ship Hulls, Water Hoses

Plumbing

Flanges

TYPICAL USES FOR C71500

Industrial

Pump Impellers, Heat Exchanger Tubes, Evaporator Tubes, Distiller Tubes, Condenser Plates, Refrigerators, Process Equipment, Condenser Components, Ferrules, Welding Backing Rings, Flexible Metal Hose, Weld Wire, Boiler Parts, Condensers, Propeller Sleeves, Heat Exchanger Components

Marine

Salt Water Flanges, Salt Water Piping, Valve Bodies, Sea Water Service, Fittings, Sea Water Condensers, Salt Water Pipe Fittings, Water Boxes - Salt Water Applications, Pump Bodies and Internal Parts - Sea Water

SIMILAR OR EQUIVALENT SPECS

ASTM B-111
ASTM B-151

ASTM B-171
ASTM B-466

MIL-C-15726 F
MIL-T-16420 K

SIZES AVAILABLE

Solid Bar.....1/4" - 12" diameter

Plates.....up to 6" thick

Tubes.....up to 10" diameter



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C70600, C71500 COPPER NICKEL “90/10” & “70/30”

Chemical Composition, Mechanical Properties, Physical Properties

CHEMICAL COMPOSITION FOR C70600

	Cu ⁽¹⁾	Fe	Pb	Mn	Ni ⁽²⁾	Zn
min/max	Rem	1.0 - 1.8	.05	1.0	9.0 - 11.0	1.0
nominal	88.6	1.4	-	-	10.0	-

MECHANICAL PROPERTIES FOR C70600/C71500 PLATE

ALLOY	TEMPER (PLATE)	SECTION SIZE (INCHES)	TENSILE (KSI) MIN	YIELD (KSI) MIN	ELONGATION IN HD MIN
C70600	M20 and O25	2 1/2 and Under	40	15	30%
		2 1/2 and Over	40	15	30%
C71500	M20 and O25	2 1/2 and Under	50	20	30%
		2 1/2 and Over	45	18	30%

PHYSICAL PROPERTIES - C70600

Melting Point - Liquidus °F.....	2100
Melting Point - Solidus °F.....	2010
Density lb/cu in @ 68 °F.....	0.323
Specific Gravity.....	8.94
Electrical Resistivity OHMS-CMIL/ft @ 68°F.....	115.0
Electrical Conductivity % IACS @ 68°F.....	9
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F.....	26.0
Coefficient of Thermal Expansion 10 ⁻⁶ per °F (68-572 °F).....	9.5
Specific Heat Capacity Btu/lb/ °F @ 68 °F.....	0.09
Modulus of Elasticity in Tension ksi.....	18000
Modulus of Rigidity ksi.....	6800
Machinability Rating.....	20

AVIVA Color Code C70600



WHITE

CHEMICAL COMPOSITION FOR C71500

	Cu ⁽¹⁾	Fe	Pb	Mn	Ni ⁽²⁾	Zn
min/max	Rem	.40 - 1.0	.05	1.0	29.0 - 33.0	1.0
nominal	69.5	.50	-	-	30.0	-

MECHANICAL PROPERTIES FOR C70600/C71500 TUBE & PIPE

ALLOY	TEMPER (TUBE & PIPE)	TENSILE (KSI) MIN	YIELD (KSI) MIN	ROCKWELL HARDNESS (B)
C70600	O60 ANN.	38	13	45 max
	H55 Light Drawn	45	35	45 - 70
	H80 Hard Drawn	50	40	63 min
C71500	O60 ANN.	52	18	51 max
	H80 Hard Drawn	70	45	70 min

PHYSICAL PROPERTIES - C71500

Melting Point - Liquidus °F.....	2260
Melting Point - Solidus °F.....	2140
Density lb/cu in @ 68 °F.....	0.323
Specific Gravity.....	8.94
Electrical Resistivity OHMS-CMIL/ft @ 68°F.....	225.0
Electrical Conductivity % IACS @ 68°F.....	4
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F.....	17.0
Coefficient of Thermal Expansion 10 ⁻⁶ per °F (68-572 °F).....	9.0
Specific Heat Capacity Btu/lb/ °F @ 68 °F.....	0.09
Modulus of Elasticity in Tension ksi.....	22000
Modulus of Rigidity ksi.....	8300
Machinability Rating.....	20

AVIVA Color Code C71500



BLUE

The values listed on this document represent reasonable approximations suitable for general engineering use. Due to commercial variations in composition and to manufacturing limitations, they should not be used for specification purposes. See applicable A.S.T.M. Specification references.

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