

**CuNi 90:10 / UNS C70600 / DIN 2.0882**

Piping material for seawater systems

CuNi 90:10 Data Sheet

**Introduction**

C70600 CuNi 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 & manganese which are necessary to maintain good corrosion resistance. Common applications for CuNi include: valves, pump components, fittings, flanges, etc.

**Chemical Composition ( Typical )**

Element	Limits	
	min	max
Nickel	9.000	11.000
Lead	0.000	0.050
Iron	1.000	1.800
Zinc	0.000	1.000
Manganese	0.000	1.000
Copper	Remainder	

**Mechanical Properties ( Typical )**

Parameter	Value
Yield 0.2 % ( Mpa/Nmm <sup>2</sup> ), Min	110
Tensile ( Mpa/Nmm <sup>2</sup> ), Min	303
Elongation (% in 50MM ), Min	42
Reduction Area(%), Min	--
Hardness ( HRB ), Max	42

**Physical Properties**

Parameter	Value
Density ( Kg/m <sup>3</sup> )	8940
Elastic Modulus ( Gpa )	140
*Co-eff of Expansion ( $\mu\text{m}/\text{m}/^\circ\text{C}$ )	9.5
*Thermal Condc. (W/m.K)	26
Electric Resistivity (n $\Omega$ .m) 25°C	115

\*Note : @20°C

**Corrosion Data**

Excellent resistance to uniform corrosion, localised corrosion in chlorinated seawater & higher erosion resistance than other copper alloys. It is resistant to humidity, non oxidizing acids, organic acids, dry gases like oxygen, chlorine, hydrogen chloride, hydrogen sulphide, sulphur dioxide, hydrogen fluoride and carbon dioxide. CuNi alloy has its cause in the formation of a stable coating layer. Practically resistant against stress corrosion cracking.

## Equivalent Grade Designation

CuNi 90/10  
Alloy 90/10  
UNS C70600  
EN DIN 2.0872  
CuNi10Fe1.6Mn  
BS CN102  
JIS C 7060T  
JIS CNP1  
EEMUA UNS 7060X

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## Available Product Forms

Round, Square, Hexagon ,Flat Bars & Wires  
Seamless / Welded Pipes  
Seamless / Welded Tubes  
Hot & Cold Rolled Plates & Sheets  
Forged Bars  
Forged Flanges  
Butt-Weld Pipe Fittings  
Socket-Weld/Forged Pipe Fittings  
Machined Components  
Ferrule Compression Fittings  
Welding Consumables

## Common Manufacturing Specifications

ASME SB111, ASME SB171, ASME SB359, ASME SB395, ASME SB466, ASME SB467, ASME SB543, ASTM B111, ASTM B122, ASTM B151, ASTM B171, ASTM B359, ASTM B395, ASTM B432, ASTM B466, ASTM B543, ASTM B552, ASTM B608, ASTM F467, ASTM F468, MIL C-15726, MIL T-15005, MIL T-16420, MIL T-22214, SAE J461, SAE J463.. etc

## Alternate to Alloy

## Applications & Industries

Power Steering Tube, Brake Lines  
Screw Lamp Bases  
Condenser Plates, Condensers & Heat Exchanger Tubes  
Weld Touch Tips  
Valve Bodies  
Evaporator Tubes, Pressure Vessels, Distiller Tubes  
Pump Impellers for Oil Refining, Ferrules, Evaporators, etc

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#1016 Prasad Chambers Opera House Mumbai 400004 INDIA

Tel : 91 - 22 - 6666 5432 Fax : 91 - 22 - 6636 3375

[www.ferrobend.com](http://www.ferrobend.com)