

**CuNi 70:30 / UNS C71500 / DIN 2.0872**

Marine Grade Copper Nickel Alloy

CuNi 70:30 Data Sheet

### Introduction

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, and pump components.

#### Chemical Composition ( Typical )

Element	Limits	
	min	max
Nickel	29.000	33.000
Lead	0.000	0.050
Iron	0.400	1.000
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	172
Tensile ( Mpa/Nmm <sup>2</sup> ), Min	372
Elongation (% in 50MM ), Min	45
Reduction Area(%), Min	--
Hardness ( HRB ), Max	45

#### Physical Properties

Parameter	Value
Density ( Kg/m <sup>3</sup> )	8940
Elastic Modulus ( Gpa )	117
*Co-eff of Expansion ( $\mu\text{m}/\text{m}/^\circ\text{C}$ )	16.2
*Thermal Condc. (W/m.K)	29
Electric Resistivity (n $\Omega$ .m) 25°C	225

\*Note : @20°C

#### Corrosion Data

CuNi alloy in general are resistant to stress corrosion in seawater and marine atmospheres for most applications. CuNi alloy tends to corrode leaving a brittle porous coppery matrix. 70-30 coppernickel can be used at higher velocities than 90-10 and aluminium brass

## Equivalent Grade Designation

CuNi 70/30  
Alloy 70/30  
UNS C71500  
EN DIN 2.0882  
EN CuNi30Mn1Fe  
DIN CEN/TS 13388  
EN CW354H

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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

Copper Nickel Alloy C72200 is next alternative to CuNi C71500 with superior resistance to corrosion & erosion.

## Applications & Industries

Pumps & Shafts for marine applications  
Refrigerators  
Heat Exchangers & Condensers  
Salt Water Piping  
Valves Body & parts  
Propellor Sleeves & Impellers  
Fasteners- Nuts, Bolts, Anchor Rods & Springs etc

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