

COPPER NICKEL (CU-NI) MANUFACTURER, EXPORTER & SUPPLIER



70/30 cupronickel is a 70% copper, 30% nickel alloy with additions of iron and manganese. These elemental additions make it somewhat more resistant to corrosion and erosion and with slightly improved strength level than 90/10, making it suitable for more demanding applications. In particular, its corrosion resistance is notably improved in high-velocity waters (up to 4.5m/s) and polluted seawater. Sunflex Metal Industries is a renowned manufacturer, supplier and exporter of CuNi 70/30.

CUPRO NICKEL 70/30 TECHNICAL DATA

CHEMICAL COMPOSITION

	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	-

⁽¹⁾ Cu value includes Ag. ⁽²⁾ Ni value includes Co./ NOTE: Cu+(sum of named elements)=99.5% min.)

APPLICABLE SPECIFICATIONS

Plate Condenser Tube	ASME SB171, ASTM B171, SAE J463, J461
Pipe Seamless	ASME SB466. ASTM B466
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 U-Bend	ASME SB395, ASTM B395
Tube Seamless	ASME SB466, ASTM B466, MILITARY MIL-T-16420

FABRICATION PROPERTIES

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

Sunflex Metal Industries

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PHYSICAL PROPERTIES

Melting Point Liquidus	2260 F	1238 C
Melting Point Solidus	2140 F	1171C
Density	0.323 lb/in ³ at 68F	8.94 gm/cm ³ @ 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 ² · °F) at 68F	29.4 W/m · °K at 20 C
Coefficient of Thermal Expansion	9.0 · 10 ⁻⁶ per °F (68-572 F)	16.2 · 10 ⁻⁶ per °C (20-300C)
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

MAXIUM PRESSURE WORK

P = Maxium work pressure(psi)

S = Minimum tensile strength of material for a specific temper (It is the value of the tensile strength in psi in Mechanica properties table)

D = Exterior diameter of tube

T = Wall thickness of tube

$$P = \frac{2T \times S}{5D}$$

NON DESTRUCTIVE TESTS

Eddy Current Testing
Hydrostatic Testing
Air Underwater Testing
Ultrasonic Testing
(PMI) Positive Material Identification

DESTRUCTIVE TESTS

Microstructure Test
Tensile Test
Flattening Test
Expansion Test
Optical Spectrometry Test

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