C70600 Copper Nickel 90/10

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

Maya Acero

90/10 cupronickel is a 90% copper, 10% nickel alloy that also contains small but important additions of iron and manganese to enhance overall strength corrosion resistance. This, combined with high ductility and toughness, makes it a popular grade for marine, architectural and industrial applications. Sunflex Metal Industries is a renowned manufacturer, supplier and exporter of CuNi 90/10.

CUPRO NICKEL 90/10 TECHNICAL DATA

CHEMICAL COMPOSITION

	Cu[1]	Fe	Pb	Mn	Ni[2]	Zn
Min /Max	Rem	1.0-1.8	.05	.07	9.0-11.0	1.0
Nominal	88.6	1.4	-	-	10.0	-

[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
Tube Finned	ASME SB359, ASTM B359, MILITARY MIL-T-22214
Tube U-Bend	ASME SB395, ASTM B395
Tube Seamless	ASME SB466, ASTM B466 / B469, MILITARY MIL-T-16420

FABRICATION PROPERTIES

Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Good
Spot Weld	Good

Seam Weld	Excellent
Butt Weld	Excellent
Capacity for being Cold Worked	Fair
Capacity for being Hot Formed	Excellent
Machinabilty Rating	Good

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PHYSICAL PROPERTIES

Melting Point Liquidus	2100F	1149 C
Melting Point Solidus	2010F	1099 C
Density	0.323 lb/in^3 at 68F	8.94 gm/cm^3 @ 20 C
Specific Gravity	8.94	8.94
Electrical Resistivity	115.0 ohms-cmil/ft @ 68F	19.12 microhm-cm @ 20 C
Electrical Conductivity	9 %IACS @ 68 F	0.053 MegaSiemens/cm @ 20 C
Thermal Conductivity	26.0 Btu · ft/(hr · ft2·°F)at 68F	45.0 W/m · °K @ 20 C
Coefficient of Thermal Expansion	9.5 ·10-6 per °F(68-572 F)	17.1 ·10-6 per °C (20-300C)
Specific Heat Capacity	0.09 Btu/lb/°Fat 68 F	377.1 J/kg · °K at 293 K
Modulas of Elasticity in Tension	18000 ksi	124000 MPa
Modulus of Rigidity	6800 ksi	46880 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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