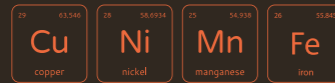




Navinic 30

CuNi₃₀Mn₁Fe



Navinic 30 is a copper-nickel (CuNi₃₀Mn₁Fe) alloy used for high strength applications in the Marine and Defence industries. This alloy offers outstanding resistance to marine corrosion (seawater, brine and sea atmospheric exposures) but also has a good behaviour in ammoniacal environments.



MATERIAL DESIGNATION

ISO	UNS	Other designations	Aerospace specifications	Other standards
CuNi30Mn1Fe	C71500 C71520	CN107 WN 2.0882 CW354H	NA	ASTM B151-B171-B466-B467 MIL T 16420 K, MIL C 15726 MIL C 24679, BS 2871, BS 2874, DEF STAN 02-879 DIN 17664, DIN 17671 DIN 17672, EN 12163 EN 12420, EN 12165 EN 12449

CHEMICAL COMPOSITION (WEIGHT%)

Cu	Ni	Mn	Fe
Balance	30%	0.5%	1%

TYPICAL APPLICATIONS

Marine and Defence industries
 Seawater pipeline systems:
 - Shipbuilding (submarine pressurized circuit)
 - Exchanger pipes

PHYSICAL PROPERTIES

General properties		
Density at 20 °C (68 °F)	8.9 g/cm ³	0.32 lb/in ³
Thermal conductivity	30 W/m.°C	17 BTU/(h.ft.°F)
Coefficient of thermal expansion from 20 to 300 °C (68 °C to 572 °F)	16 x 10 ⁻⁶ /°C	8.89 µin/in °F
Young's modulus	130 GPa	18 855 ksi
Magnetic permeability	1.01	
Electrical properties		
Resistivity at 20 °C (68 °F)	34 µΩ.cm	204.5 Ω.circ mil/ft
Electrical conductivity	5 %IACS	

COMPATIBLE DOWNSTREAM PROCESS

Extrusion, forging or die stamping
 Cold drawing
 Heat treatment
 Hot working
 Cold working (bending, expending, drawing) for manufacturing of thin pipes and fittings.
 Arc, MIG, TIG welding
 Hard and soft brazing
 Machinability: 20% of free-cutting brass

KEY FEATURES

Non-magnetic
 Excellent resistance to seawater corrosion
 - By pitting corrosion in stagnant water
 - By erosion-corrosion and cavitation in circulation (3.5 m/s max)
 - By stress corrosion
 - By fouling corrosion

MECHANICAL PROPERTIES

Size	Temper	Yield Strength 0.2% MPa (ksi)	Tensile Strength MPa (ksi)	Elongation (%)	Hardness (HB)
For other dimensions and shapes, mechanical properties on demand					
Bars					
15.875 ≤ Ø ≤ 254 mm (0.59 ≤ Ø ≤ 10 in.)	Annealed	≥ 130 (≥ 19)	≥ 350 (≥ 51)	≥ 30	≥ 80
19.05 ≤ Ø ≤ 25.4 mm (0.75 ≤ Ø ≤ 1 in.)	Cold worked	≥ 300 (≥ 43)	≥ 460 (≥ 65)	≥ 15	≥ 120
Hollow bars and Tubes					
10 ≤ OD ≤ 273.05 mm (0.4 ≤ OD ≤ 10.75 in.)	Annealed	≥ 130 (≥ 19)	≥ 350 (≥ 51)	≥ 30	≥ 80

OTHER AVAILABLE FORMS

Plates, billets, strips, sheets, rods, wires, standard & complex profiles, marine tubes & fitting, machined blanks and parts