

Copper Nickel 90/10

Smiths Advanced Metals

Rev: SAM/datasheets/copper/copper-nickel-90/10-bar/feb-22

Page: 1 of 1

Strength Corrosion Resistance

Enhanced alloy performance

Copper Nickel 90/10 (CN102) is a cupronickel alloy. While the basis of the alloy is 90% copper and 10% nickel, small amounts of iron and manganese are introduced during the alloying process to enhance performance.

Copper Nickel 90/10 is an excellent choice for applications where erosion, stress-erosion and biofouling in saltwater atmospheres are a consideration. The alloy offers an attractive combination of toughness with high ductility. Mechanical properties are retained even at cryogenic temperatures, and resistance to hydrogen embrittlement is also high.

Smiths Advanced Metals stock [Copper Nickel 90/10](#) bars in the annealed condition. Bars of grade Copper Nickel 90/10 are available in various sizes.



Grades / Specifications

- ASTM B151
- BS2874
- DEF STAN 02-779
- DEF STAN 02-879
- EN12163
- C70600
- CN102
- CuNi10Fe1Mn
- CW352H
- NES779

Key Applications

- Valve & pump components
- Propeller sleeves
- Saltwater pipes and fittings
- Condenser plates
- Heat exchangers

Chemical Composition (weight %)

	Cu	Ni	Mn	Fe	C	Al	S	B	P	Pb	Si	Bi	Others
min.	Bal	10.00	0.50	1.00									
max.	Bal	11.00	1.50	2.00	0.05	0.03	0.05	0.02	0.01	0.01	0.05	0.002	0.30

As per DEF STAN 02-879

Physical Properties

Density	8.90 gm/cm ³ @ 20°C
Melting point	1100 - 1145°C
Specific Heat Capacity	0.09 cal/g°C @ 20°C
Electrical Conductivity	5.8 microhm mm ² or 10% IACS

Mechanical Properties (annealed condition as per DEF-STAN 02-879)

Ultimate Tensile Strength	280 MPa
Elongation	30%
Hardness (HV)	90 max

Benefits

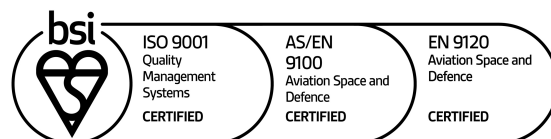
- Superior welding and fabrication characteristics
- Excellent salt water erosion & corrosion resistance
- High ductility and toughness
- Excellent antimicrobial characteristics

www.smithsadvanced.com

info@smithsadvanced.com



Stratton Business Park,
London Road, Biggleswade,
Bedfordshire SG18 8QB
Tel: +44 (0) 1767 604710



All information in our data sheet is based on approximate testing and is stated to the best of our knowledge and belief. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of trading.