



## Alloy C-22

**Alloy Designation:** (UNS N06022)

**Specifications:** ASTM B622 / ASTM B829

**Typical Size Ranges:** OD (.02"-1.00")

**Available Product Forms:**

Annealed to Full Hard, in Coiled or Straight form

### General Description and Applications:

The unique composition of C-22 containing high amounts of chromium, tungsten, and molybdenum make it extremely resistant to pitting corrosion and oxidation. HandyTube's products manufactured from C-22 are commonly utilized in chemical and petro-chemical processing, oil and gas exploration, pulp and paper production, steam and heat trace applications. C-22 is ideal for use in seawater environments or in situations where certain acidic compounds are present.

### Commitment to Quality:

ISO 9001-  
CERTIFIED



Lloyd's Register  
LRQA

SHIPBUILDING  
CERTIFICATIONS



Lloyd's Register  
Marine



BUREAU  
VERITAS

HIGH PRESSURE  
APPLICATIONS



AD-2000-Merkblatt-W0

PED

2014 / 68 / EU

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## Chemical Properties as per Specs:

CHEMICAL COMPOSITION BY WEIGHT PERCENT															
Ni	Cr	Fe	Mo	Al	Ti	Nb	Co	Ta	Mn	Cu	N	C	S	Si	P
Bal.	20.0 - 22.5	2.0 - 6.0	12.5 - 14.5	-	-	2.5 Max	2.5 - 3.5	-	0.5 Max	-	0.35 Max	.015 Max	0.02 Max	0.08 Max	0.02 Max

### PREN CALCULATION AND NUMBER:

- $PREN = Cr + 3.3(Mo + 0.5W) + 16N$
- $MIN\ PREN = 20 + 3.3(12.5) + 3.3(0.5)(2.5) = 65.38$
- $MAX\ PREN = 22.5 + 3.3(14.5) + 3.3(0.5)(3.5) = 76.13$
- PREN Range: 65.38 - 76.13

MECHANICAL PROPERTIES	
Ultimate Tensile Strength	100 ksi Minimum (690 MPa)
Yield Strength	45 ksi Minimum (310 MPa)
% Elongation to Failure	45% Minimum
Hardness	85 HRB Max
Young's Modulus	$30.0 \times 10^6$ ksi (207 GPa)

PHYSICAL PROPERTIES	
Density	0.311 lb/in <sup>3</sup> or 8.62 g/cm <sup>3</sup>
Melting Point	2530°F or 1388°C
Coefficient of Thermal Expansion	6.91 (μin/in-°F)
Specific Heat	0.101 BTU/lb-°F
Thermal Conductivity	9.4 (W/m.K)
Electrical Resistivity	121.5 μΩcm

### ANNEALING SUGGESTION:

- C-22 is best annealed between the temperatures of 2000-2150 degrees Fahrenheit or 1093-1177 degrees Celsius.

Disclaimer: Always consult with design engineer, the information contained in this data sheet is for guidance only.