HandyTube
Performance That's Seamless.™

# Alloy C-276

## Alloy Designation: (UNS N10276)

## Specifications: ASTM B622

## Typical Size Ranges: OD (.02"–1.00")

## Available Product Forms:

Annealed to Full Hard, in Coiled or Straight form

## General Description and Applications:

As a result of its high molybdenum, tungsten, and chromium content, C-276 provides outstanding resistance against pitting and crevice corrosion. Alloy C276 resists some of the most severe media encountered in chemical processing including phosphoric acid, wet chlorine gas, acetic anhydride, oxidizing acid, chlorides, solvents, formic and acetic acids, and hypochlorites. Applications of HandyTube products containing this alloy include chemical and petro-chemical processing, oil and gas exploration, pulp and paper production, steam and heat trace applications.

## Commitment to Quality:

**ISO 9001-CERTIFIED**

Lloyd's Register LRQA

**SHIPBUILDING CERTIFICATIONS**

DNV · Lloyd's Register Marine · ABS · Bureau Veritas

**HIGH PRESSURE APPLICATIONS**

TÜV SÜD AD-2000-Merkblatt-W0 · PED 2014 / 68 / EU

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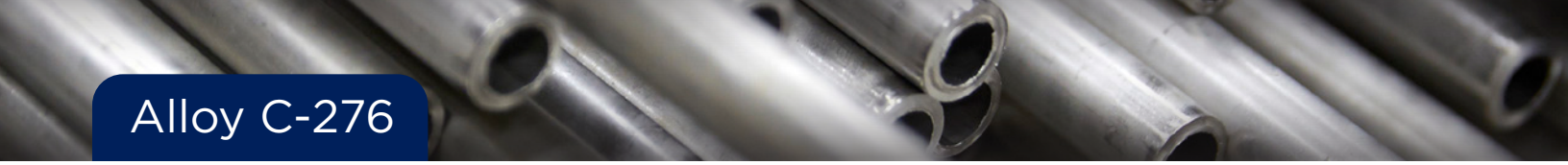

# Alloy C-276

## 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. | 14.5 - 16.5 | 4.0 - 7.0 | 15.0 - 17.0 | - | - | 2.5 Max | 3.0 - 4.5 | - | 1.0 Max | - | 0.35 Max | .01 Max | 0.01 Max | 0.08 Max | 0.025 Max |

### PREN CALCULATION AND NUMBER:

- PREN = Cr + 3.3(Mo +0.5W) + 16N
- MIN PREN = 14.5 + 3.3(15) + 3.3(0.5)(3) = 68.95
- MAX PREN = 22.5 + 3.3(14.5) + 3.3(0.5)(3.5) = 80.03
- PREN Range: 68.95 - 80.03

| MECHANICAL PROPERTIES | |
|---|---|
| Ultimate Tensile Strength | 100 ksi Minimum (690 MPa) |
| Yield Strength | 41 ksi Minimum (283 MPa) |
| % Elongation to Failure | 40% Minimum |
| Hardness | 100 HRB Max |
| Young's Modulus | 29.7x10^6 ksi (205 GPa) |

| PHYSICAL PROPERTIES | |
|---|---|
| Density | 0.322 lb/in$^3$ or 8.90 g/cm$^3$ |
| Melting Point | 2415 – 2500°F or 1324 – 1370°C |
| Coefficient of Thermal Expansion | 6.22 (µin/in-°F) |
| Specific Heat | 0.102 BTU/lb-°F |
| Thermal Conductivity | 10.2 (W/m.K) |
| Electrical Resisitivity | 130 nΩm |

### ANNEALING SUGGESTION:

- C-276 is best annealed between the temperatures of 2050-2150 degrees Fahrenheit or 1121-1177 degrees Celsius.