

Alloy C276

The most universally corrosion resistant material available today, look no further than C276

A solution-annealed nickel-molybdenum-chromium alloy with the addition of tungsten, C276 exhibits excellent corrosion resistance in a wide range of severe environments.

PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
Alloy C276 coil	1.6 mm	3.05 mm
Alloy C276 sheet & plate	0.63 mm	76.2 mm
Alloy C276 round tubing	0.25 in	1 in
Alloy C276 round bar	3.175 mm	280 mm
Alloy C276 pipe fittings	0.5 in	24 in
Alloy C276 pipe	0.5 in	24 in
Alloy C276 flanges	0.5 in	24 in

Can't find the size you need? **Please contact us at onlinesales@neonickel.com**

CHEMICAL ANALYSIS

%	NI	CR	MO	W	CO	C	MN	SI	P	S	FE	V
Min	Balance	14.5	15	3	0	0	0	0	0	0	4	0
Max	Balance	16.5	17	4.5	2.5	0.01	1	0.08	0.04	0.03	7	0.35

APPLICATIONS

- Pressure Vessels
- Reactors
- Mixers and Agitators
- Scrubbers
- Dampers
- Heat Exchangers
- Venturis
- Evaporators
- Solvent Recovery Plants
- Pumps and Valves

ABOUT ALLOY C276

Alloy C276, with a high nickel contents, is immune to chloride-induced stress corrosion cracking. The high molybdenum and chromium contents allow the alloy to perform in oxidising, non-oxidising and mixed acids media, whilst exhibiting outstanding resistance to pitting and crevice corrosion attack. The addition of tungsten inhibits the development of pits. Finally, C276 is suitable for off-shore applications where hydrogen-sulphide(H₂S) stress corrosion cracking resistance is essential. In aggressive or corrosive environments when other alloys have failed, many companies have then turned to C276 alloy - one of the most corrosion resistant alloys on the market. Industries where C276 is utilised are petrochemical and chemical processing, power generation, pharmaceutical, pulp and paper production and waste treatment to name a few.

PROPERTIES

Density:	8.89 g/cm ³
Melting Range:	1325 - 1370°C
Hardness:	87 HRB
Specific Heat Capacity:	427 J/kg.°C
Electrical Resistivity:	1.229 μΩ.m
Curie Temperature:	°C
Poisson's Ratio:	0.307

MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	21°C	100°C	200°C	300°C	400°C
Ultimate Tensile Strength for sheet ≤ 5 mm thick	750-1000				
Ultimate Tensile Strength for sheet 5 to ≤ 20 mm thick	700-950				

Ultimate Tensile Strength for bar ≤ 90 mm thick MECHANICAL & PHYSICAL PROPERTIES	700-950	100°C	200°C	300°C	400°C
0.2% Yield Strength for sheet ≤ 50 mm thick	21°C	280	240	220	195
0.2% Yield Strength for sheet 5 to ≤ 20 mm thick		255	255	200	170
0.2% Yield Strength for bar ≤ 90 mm thick		255	225	200	170
Elongation, % for sheet ≤ 5 mm thick	30				
Elongation, % for sheet 5 to ≤ 20 mm thick	25				
Elongation, % for bar ≤ 90 mm thick	35				
Charpy Impact V-notch mean value / J	96 (56 when welded)				
Charpy Impact V-notch individual value / J	67 (39 when welded)				

AQUEOUS CORROSION DATA

MEDIA	COMMON NAME	TEMP °F (°C)	CORROSION RATE (MPY)
80% C2H4O2	Acetic Acid	Boiling	0.15
10% NH3Br	Ammonium Bromide	176 (80)	Nil
10% NH3Br	Ammonium Bromide	Boiling	Nil
10% FeCl3	Ferric Chloride	Boiling	2
88% CH2O2	Formic Acid	Boiling	1
0.2% HCl	Hydrochloric Acid	Boiling	0.60
1% HCl	Hydrochloric Acid	Boiling	13.3
2% HCl	Hydrochloric Acid	Boiling	43
5% HCl	Hydrochloric Acid	140 (60)	10
20% HCl	Hydrochloric Acid	212 (100)	154
3% HF	Hydrochloric Acid	176 (80)	53
10% HF	Hydrochloric Acid	75 (24)	2
10% HF	Hydrochloric Acid	176 (80)	28
Concentrated HF	Hydrochloric Acid	75 (24)	24
Concentrated HF	Hydrochloric Acid	176 (80)	80
10% HBr	Hydrogen Bromide	176 (80)	<1
10% HBr	Hydrogen Bromide	Boiling	<1
10% HNO3	Nitric Acid	Boiling	15
65% HNO3	Nitric Acid	Boiling	888
20% H3PO4	Phosphoric Acid	Boiling	<1

MEDIA	COMMON NAME	TEMP °F (°C)	CORROSION RATE (MPY)
60% H ₃ PO ₄	Phosphoric Acid	Boiling	1
85% H ₃ PO ₄	Phosphoric Acid	212 (100)	5
85% H ₃ PO ₄	Phosphoric Acid	Boiling	121
50% NaOH	Sodium Hydroxide	Boiling	1
10% H ₂ SO ₄	Sulfuric Acid	Boiling	20
20% H ₂ SO ₄	Sulfuric Acid	176 (80)	3
40% H ₂ SO ₄	Sulfuric Acid	176 (80)	5
80% H ₂ SO ₄	Sulfuric Acid	176 (80)	4

SPECIFICATIONS

UNS Number: N10276

W.Nr.Number: 2.4819

Standards: ASTM B564, B574, B575, B619, B622, B626, B366, B462, B775