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TECHNICAL DATA SHEET

Nickel Alloy Alloy C276 (UNS N10276)

Application

C276 is a nickel-molybdenum-chromium superalloy with an addition of tungsten designed to have excellent corrosion resistance in a wide range of severe environments. The high chromium, molybdenum and tungsten contents make the alloy especially resistant to pitting and crevice corrosion in reducing environments while chromium conveys resistance to oxidizing media. The low carbon content minimizes carbide precipitation during welding to maintain corrosion resistance in as-welded structures.

Alloy C276 is resistant to the formation of grain boundary precipitates in the weld heat-affected zone, thus making it suitable for most chemical process application in an as welded condition. Alloy C276 is widely used in the most severe environments such as mixed acid chemical processing, pollution control, pulp and paper production, industrial and municipal waste treatment, and recovery of sour oil and gas.

Available tube product forms

STRAIGHT | COILED | SEAMLESS

Typical manufacturing specifications

ASTM B622

Also individual customer specifications.

Industries predominantly using this grade

Chemical processes, Oil and gas etc.

Maximum Coil Length per Dimension (Unit : meter)

		Wall thickness (mm)					
		0.51	0.71	0.89	1.24	1.65	2.11
Outside diameter (mm)	3.175	-	-	-	-	-	-
	6.35	-	402	332	254	208	-
	9.53	-	-	210	157	124	103
	12.7	-	-	153	113	88	72
	19.05	-	-	-	73	56	45
	25.4	-	-	-	54	41	33

* We can provide longer length according to customer requirement

Technical Data

Chemical composition(% by weight)

Element	Cr	Mo	Fe	W	C	Si	Co	Mn	V	P	S	-
Minimun	14.5	15.0	4.0	3.0	-	-	-	-	-	-	-	-
Maximum	16.5	17.0	7.0	4.5	0.01	0.08	2.50	1.0	0.35	0.04	0.03	-
Aiming	15.5	16.0	6.0	3.5	0.003	0.02	0.8	0.1	0.05	0.001	0.001	-

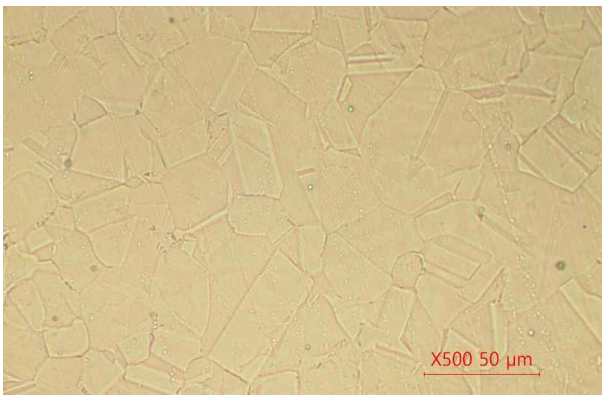
Mechanical Properties

	Specifications(Tubing, Annealed)		Actual data	
Tensile Rm	100	ksi (min.)	108~130	ksi (min.)
Tensile Rm	690	MPa (min.)	750~900	MPa (min.)
Yield (R.p. 0.2%)	41	ksi (min.)	50~72	ksi (min.)
Yield (R.p. 0.2%)	283	MPa (min.)	350~500	MPa (min.)
Elongation	40	% (min.)	50~60	% (min.)

Physical Properties(Room Temperature)

Specific Heat (0-100°C)	427	J.kg-1.°K-1
Thermal Conductivity	9.4	W.m -1.°K-1
Thermal Expansion	11.2	μm/m/°C
Modulus Elasticity	221	GPa
Electrical Resistivity	130	μohm·cm
Density	8.89	g/cm3

Microstructure



Maximum allowable pressure (Unit : BAR)

		Wall thickness (mm)						
		0.89	1.24	1.65	2.18	2.77	3.96	4.78
Outside diameter (mm)	6.35	529	769	1052	1404	-	-	-
	9.53	340	487	671	916	1186	-	-
	12.7	250	356	486	664	869	-	-
	19.05	-	232	313	423	551	-	-
	25.4	-	172	231	310	401	596	738
	31.8	-	-	183	245	315	464	572
	38.1	-	-	152	202	260	381	468
	50.8	-	-	113	150	193	280	342

* Please let us know your design pressure, we can produce requested tube size

* The table above is for your reference