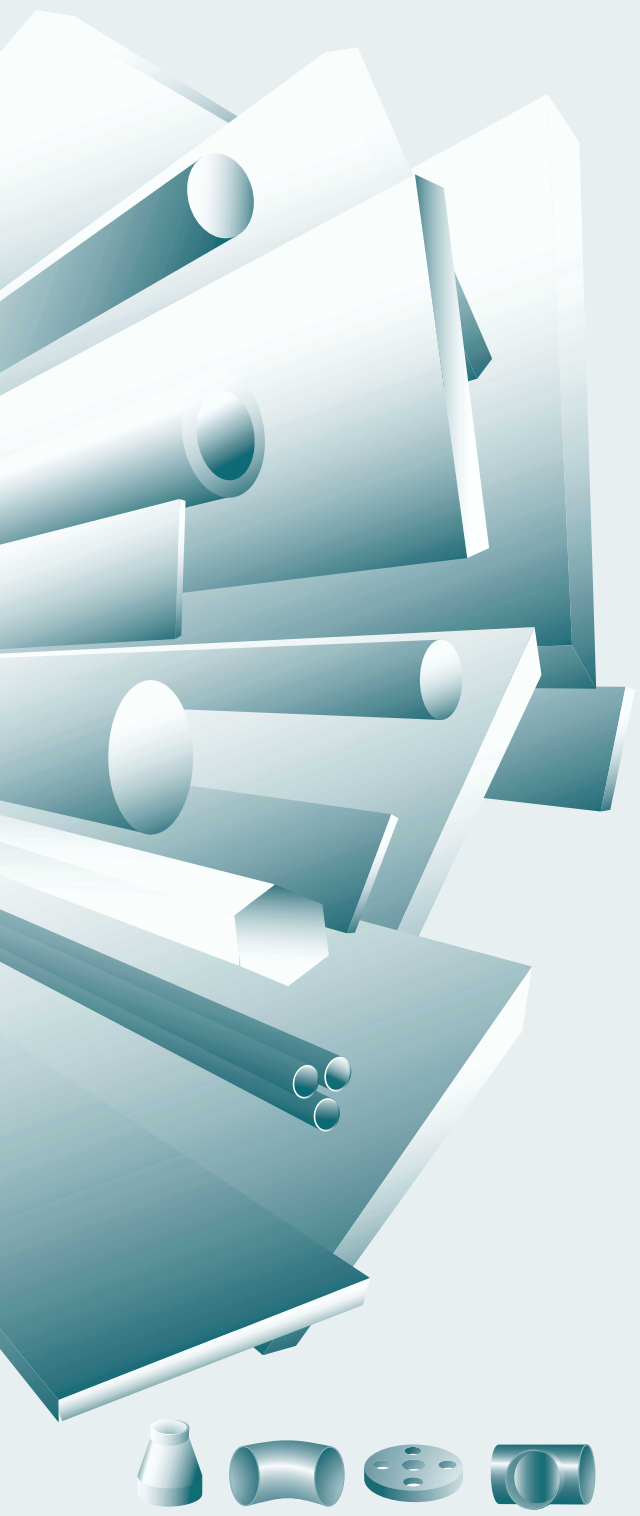
Specifications Alloy C-276



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Alloy C-276

Alloy C-276 (UNS N10276) is a nickel-chromium-molybdenum alloy containing tungsten and with extremely low carbon and silicon contents.

This alloy is characterised by:

- excellent resistance to a wide range of corrosive media, under oxidising and reducing conditions
- outstanding resistance to localised corrosion such as pitting and crevice corrosion, as well as to chloride-ion stress-corrosion cracking

Designation and Standards

Country National Standards	Material Designation	Specification							
		Chem. compo-sition	Tube and pipe seamless	Tube and pipe welded	Sheet and plate	Rod and bar	Strip	Wire	Forgings
France AFNOR	NC17D								
Germany	W.-Nr.2.4819 NiMo16Cr15W								
DIN		17744	17751		17750	17752	17750		
VdTÜV-Wbl		400			400	400			400
United Kingdom BS									
USA	UNS N10276								
ASTM			B622	B619/626	B575	B574*	B575		B564
ASME			SB622	SB619 /626	SB575	SB574*	SB575		SB564
ASME Code case			1924	1924	1924	1924	1924		
ISO	NiMo16 Cr15Fe6W4	9722	6207		6208	9723	6208	9724	9725

*rod only

Chemical Composition (%)

Alloy C-276	Ni	Cr	Fe	C	Mn	Si	Mo	W	Co	V	P	S	
min	bal	15.0	4.0				15.0	3.0		0.1			
max	bal	16.5	7.0	0.010	1.0	0.08	17.0	4.5	2.5	0.3	0.015	0.010	

Mechanical Properties

The following properties are applicable to Alloy C-276 in the solution-treated condition and indicated size ranges. Specified properties of material outside these ranges are subject to special enquiry.

Form	Dimensions		0.2% Yield Strength		1.0% Yield Strength		Tensile strength		Elong A5 %	Brinell hardness
	mm	in	N/mm²	ksi	N/mm²	ksi	N/mm²	ksi		HB
Sheet and	≤ 5	≤ 0.20	310	45	330	48	750	108	30	≤ 240
Plate[1)]	>5-20	>0.20-0.80	280	41	300	44	700	102	25	
Rod[1)]	≤ 100	≤ 4								
Tube (wall)	0.5 - 5	0.02 - 020					690	100	40	

[1)]according to VdTÜV data sheet 400

Please Note: The figures quoted are intended for guidance only. For further information, please refer to the standards listed or contact our sales or QA Departments.

Metallurgical Structure

Alloy C-276 has a face-centred cubic structure.

Corrosion Resistance

Alloy C-276 shows high resistance to a very wide range of chemical media, especially under reducing conditions. It is particularly resistant to hydrochloric acid, sulphuric acid and hydrofluoric acid, or to mixtures of these. The alloy also shows exceptional resistance to localised attack in acid halide media. It is one of the few practical materials for handling wet chlorine gas.

Optimum corrosion resistance can be obtained only if the material is in the correct metallurgical condition and clean.

Applications

Alloy C-276 finds wide application in the chemical and petrochemical industries.

Typical applications include:

- flue gas desulphurisation systems
- organic syntheses involving acid chloride catalysts
- MDI and TDI production
- vinyl chloride monomer production
- production of hydrofluoric acid
- sulphuric acid coolers
- chlorine driers
- production tubing in corrosive oil and gas wells
- melamine production
- methionine synthesis
- pickling baths
- aramide plastics production

Stock Size Range

Alloy C-276 - Bar, Tube, Pipe and Fittings

Bar mm dia	Tube mm o/d	Pipe nb sch10 - sch80	Seamless fittings nb
12.0 - 130.0	6.35 - 25.4	1/2" - 3"	1/2" - 3"

Stock Size Range continued

Alloy C-276 - Sheet and Plate

Size	2m x 1m	8' x 4'	2.5m x 1.25m	3m x 1.2m	3m x 1.5m
Thickness	-	1 1/2"	1"	2, 3mm	3, 5, 6, 10, 12mm

Size	10' x 5'	4m x 2m	6m x 2m	6.096m x 2.438m
Thickness	3, 5, 6, 10, 12mm	4, 4.76, 6, 8, 10, 12, 19mm	-	3, 5, 6, 10, 12mm

The above tables represent our standard stock range.

Other sizes can be manufactured to order, often with short lead times.