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TECHNICAL DATA SHEET

Nickel Alloy Alloy C22 (UNS N06022)

Application

Alloy C22, is a versatile austenitic nickel-chromiummolybdenumtungsten alloy with enhanced resistance to pitting, crevice corrosion and stress corrosion cracking. The high chromium content provides good resistance to oxidizing media while the molybdenum and tungsten content give good resistance to reducing media. This nickel alloy also has excellent resistance to oxidizing aqueous media including wet chlorine and mixtures containing nitric acid or oxidizing acids with chlorine ions.

Alloy C22 has resistance to oxidizing acid chlorides, wet chlorine, formic and acetic acids, ferric and cupric chlorides, sea water, brine and many mixed or contaminated chemical solutions, both organic and inorganic. This nickel alloy also offers optimum resistance to environments where reducing and oxidizing conditions are encountered in process streams.
This is beneficial in multi-purpose plants where such “upset” conditions occur frequently.

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	-	412	339	260	213	-
	9.53	-	-	214	160	127	105
	12.7	-	-	157	116	90	74
	19.05	-	-	-	75	57	46
	25.4	-	-	-	55	42	34

* 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	20.0	12.5	2.0	2.5	-	-	-	-	-	-	-	-
Maximum	22.5	14.5	6.0	3.5	0.015	0.08	2.50	0.50	0.35	0.02	0.02	-
Aiming	21.0	13.5	3.8	2.8	0.004	0.04	0.001	0.10	0.01	0.001	0.001	-

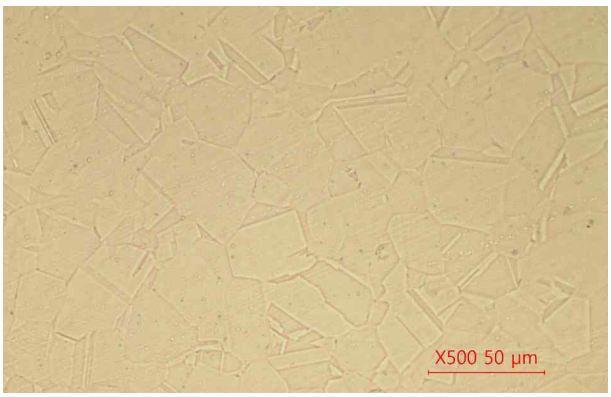
Mechanical Properties

	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%)	45	ksi (min.)	50~72	ksi (min.)
Yield (R.p. 0.2%)	310	MPa (min.)	350~500	MPa (min.)
Elongation	45	% (min.)	50~60	% (min.)

Physical Properties(Room Temperature)

Specific Heat (0-100°C)	414	J.kg-1.°K-1
Thermal Conductivity	10.2	W.m -1.°K-1
Thermal Expansion	6.9	μm/m/°C
Modulus Elasticity	206	GPa
Electrical Resistivity	114	μohm·cm
Density	8.69	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	580	844	1155	1542	-	-	-
	9.53	373	535	736	1005	1302	-	-
	12.7	275	391	534	729	954	-	-
	19.05	-	254	344	464	605	-	-
	25.4	-	188	254	341	441	654	810
	31.8	-	-	201	268	346	509	628
	38.1	-	-	166	222	286	418	513
	50.8	-	-	124	165	211	307	376

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

* The table above is for your reference