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TECHNICAL DATA SHEET

Nickel Alloy Alloy 625 (UNS N06625)

Application

Alloy 625 is a nickel-chromium alloy used for its high strength, excellent fabricability and outstanding corrosion resistance. Service temperatures can range from cryogenic to 980°C(1800°F).

Alloy 625 strength is derived from the solid solution strengthening effect of molybdenium and niobium on its nickel-chromium matrix.
Thus precipitation-hardening treatments are not required. This combination of elements also is responsible for superior resistance to a wide range of corrosive environments of unusual severity as well as to hightemperature effects such as oxidation and carburization.

Available tube product forms

STRAIGHT | COILED | SEAMLESS

Typical manufacturing specifications

ASTM B444

Also individual customer specifications.

Industries predominantly using this grade

Oil and gas, Chemical processes,

Nuclear and power 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	-	425	350	268	219	-
	9.53	-	-	221	166	131	109
	12.7	-	-	162	120	93	76
	19.05	-	-	-	77	59	48
	25.4	-	-	-	57	43	35

* We can provide longer length according to customer requirement

Technical Data

Chemical composition(% by weight)

Element	C	Mn	Si	P	S	Cr	Nb+Ta	Mo	Fe	Al	Ti	Ni
Minimun	-	-	-	-	-	20.0	3.15	8.0	-	-	-	58.0
Maximum	0.10	0.50	0.50	0.015	0.015	23.0	4.15	10.0	5.0	0.40	0.40	-
Aiming	0.03	0.1	0.1	0.005	0.001	22	3.66	8.8	3.5	0.25	0.25	60

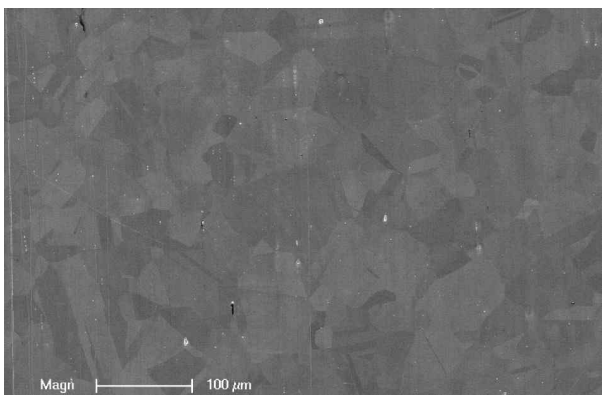
Mechanical Properties

	Tubing, Annealed(at 871℃)		Tubing, Annealed(at 1093℃)	
Tensile Rm	120	ksi (min.)	100	ksi (min.)
Tensile Rm	827	MPa (min.)	690	MPa (min.)
Yield (R.p. 0.2%)	60	ksi (min.)	40	ksi (min.)
Yield (R.p. 0.2%)	414	MPa (min.)	276	MPa (min.)
Elongation	30	% (min.)	30	% (min.)

Physical Properties(Room Temperature)

Specific Heat (0-100°C)	460	J.kg-1.°K-1
Thermal Conductivity	14.8	W.m -1.°K-1
Thermal Expansion	12.4	μm/m/°C
Modulus Elasticity	207	GPa
Electrical Resistivity	129	μohm·cm
Density	8.44	g/cm3

Microstructure



Maximum allowable pressure (Unit : BAR)

		Wall thickness (mm)						
		0.89	1.24	1.65	2.11	2.77	3.96	4.78
Outside diameter (mm)	6.35	774	1125	1540	-	-	-	-
	9.53	497	713	982	1293	-	-	-
	12.7	366	521	712	937	1271	-	-
	19.05	-	339	459	597	806	-	-
	25.4	-	251	338	439	588	872	1080
	31.8	-	-	268	346	461	679	837
	38.1	-	-	222	286	381	558	685
	50.8	-	-	165	213	282	410	501

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

* The table above is for your reference