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TECHNICAL DATA SHEET

Nickel Alloy **Alloy 600** **(UNS N06600)**

┌ Application

Alloy 600 is a nickel-chromium alloy designed for use from cryogenic to elevated temperatures in the range of 2000°F (1093°C). The high nickel content of the alloy enables it to retain considerable resistance under reducing conditions and makes it resistant to corrosion by a number of organic and inorganic compounds. The nickel content gives it excellent resistance to chloride-ion stress-corrosion cracking and also provides excellent resistance to alkaline solutions.

Its chromium content gives the alloy resistance to sulphur compounds and various oxidizing environments. The chromium content of the alloy makes it superior to commercially pure nickel under oxidizing conditions. In strong oxidizing solutions like hot, concentrated nitric acid, 600 has poor resistance. Alloy 600 is relatively un-attacked by the majority of neutral and alkaline salt solutions and is used in some caustic environments.
The alloy resists steam and mixtures of steam, air and carbon dioxide.

Available tube product forms

STRAIGHT | **SEAMLESS**

Typical manufacturing specifications

ASTM B163, ASTM B167

Also individual customer specifications.

Industries predominantly using this grade

Heat exchangers, Thermocouples, Chemical processes

Nuclear and power etc.

┌ Technical Data

Chemical composition(% by weight)

Element	Ni	Cr	Fe	Mn	C	Cu	Si	S	-	-	-	-
Minimun	72.0	14.0	6.0	-	-	-	-	-	-	-	-	-
Maximum	-	17.0	10.0	1.0	0.15	0.5	0.5	0.015	-	-	-	-
Aiming	73.6	15.8	8.8	0.17	0.003	0.02	0.4	0.001	-	-	-	-

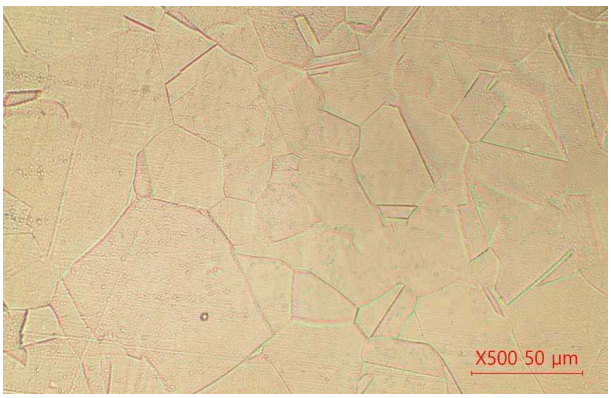
Mechanical Properties

	Tubing, Annealed (OD 5 in. under)		Actual data	
Tensile Rm	80	ksi (min.)	84~101	ksi
Tensile Rm	550	MPa (min.)	580~700	MPa
Yield (R.p. 0.2%)	35	ksi (min.)	40~50	ksi
Yield (R.p. 0.2%)	240	MPa (min.)	280~350	MPa
Elongation	30	% (min.)	37~40	%

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	103	μohm·cm
Density	8.42	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	451	655	897	1197	-	-	-
	9.53	290	415	572	780	1011	-	-
	12.7	213	304	414	566	741	-	-
	19.05	-	197	267	361	470	-	-
	25.4	-	146	197	265	342	508	629
	31.8	-	-	156	209	269	396	487
	38.1	-	-	129	173	222	325	399
	50.8	-	-	96	128	164	239	292

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

* The table above is for your reference