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TECHNICAL DATA SHEET

Nickel Alloy **Alloy 800** **(UNS N08800)**

Application

Alloy 800 (UNS N08800) is a widely used material for construction of equipment requiring corrosion resistance, heat resistance, strength, and stability for service up to 1500°F (816°C). Alloy 800 offers general corrosion resistance to many aqueous media and, by virtue of its content of nickel, resists stress corrosion cracking. At elevated temperatures it offers resistance to oxidation, carburization, and sulfidation along with rupture and creep strength.
For applications requiring greater resistance to stress rupture and creep, especially at temperatures above 1500°F (816°C), INCOLOY alloys 800H and 800HT are used.

The limiting chemical composition of alloy 800 is shown in Table. The chromium in the alloy imparts both aqueous and heat resistance. Iron provides resistance to internal oxidation. The nickel content maintains a ductile, austenitic structure. Thus, alloy 800 is readily formed, welded, and machined.

Available tube product forms

STRAIGHT | **SEAMLESS**

Typical manufacturing specifications

ASTM B163, ASTM B407

Also individual customer specifications.

Industries predominantly using this grade

Chemical & Petrochemical processing equipment

Oil and gas, Nuclear and power etc.

Technical Data

Chemical composition(% by weight)

Element	Ni	Cr	Mn	C	Cu	Si	S	Al	Ti	Fe	-	-
Minimun	30.0	19.0	-	-	-	-	-	0.15	0.15	39.5	-	-
Maximum	35.0	23.0	1.5	0.10	0.75	1.0	0.015	0.60	0.60	-	-	-

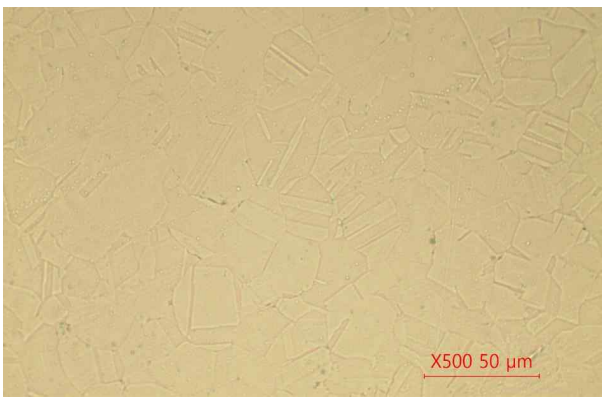
Mechanical Properties

	Specifications(Tubing, Annealed,800)		Specifications(Tubing, Annealed,800H/HT)	
Tensile Rm	75	ksi (min.)	65	ksi (min.)
Tensile Rm	520	MPa (min.)	450	MPa (min.)
Yield (R.p. 0.2%)	30	ksi (min.)	25	ksi (min.)
Yield (R.p. 0.2%)	205	MPa (min.)	170	MPa (min.)
Elongation	30	% (min.)	30	% (min.)

Physical Properties(Room Temperature)

Specific Heat (0-100°C)	460	J.kg-1.°K-1
Thermal Conductivity	11.5	W.m -1.°K-1
Thermal Expansion	14.4	μm/m/°C
Modulus Elasticity	208	GPa
Electrical Resistivity	99	μohm·cm
Density	8.0	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	387	562	770	1028	-	-	-
	9.53	249	356	491	670	868	-	-
	12.7	183	261	356	486	636	-	-
	19.05	-	170	229	310	403	-	-
	25.4	-	126	169	227	294	436	540
	31.8	-	-	134	179	231	340	418
	38.1	-	-	111	148	190	279	342
	50.8	-	-	83	110	141	205	251

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

* The table above is for your reference