



Alloy 21-6-9 (UNS S21900)

21Cr-6Ni-9Mn is a high manganese nitrogen strengthened, austenitic stainless steel. It combines high strength in the annealed condition, excellent resistance to oxidation at high temperatures as well as good resistance to lead oxide and a high level of corrosion resistance at ambient temperatures.

The alloy can be fabricated and formed much the same as type 304 and 316, and is readily weldable. It remains nonmagnetic after severe cold work.

AVAILABLE TUBE PRODUCT FORMS

STRAIGHT

SEAM WELDED AND COLD REDRAWN

SEAM WELDED, COLD REDRAWN AND ANNEALED

TYPICAL MANUFACTURING SPECIFICATIONS

AMS 5561

Also individual customer specifications.

TYPICAL APPLICATIONS

AIRCRAFT HYDRAULIC TUBES

AIRCRAFT ENGINE COMPONENTS

INDUSTRIES PREDOMINANTLY USING THIS GRADE

AEROSPACE



Technical Data

MECHANICAL PROPERTIES

Temper	Annealed		Cold-worked	
Tensile Rm	95	ksi (min)	142	ksi (min)
Tensile Rm	655	MPa (min)	979	MPa (min)
R.p. 0.2% Yield	48	ksi (min)	120	ksi(min)
R.p. 0.2% Yield	330	MPa (min)	827	MPa (min)
Elongation (2" or 4D gl)	35	% (min)	20	% (min)

PHYSICAL PROPERTIES (Room Temperature)

Specific Heat (0-100°C)	500	J.kg-1.°K-1
Thermal Conductivity	14	W.m -1.°K-1
Thermal Expansion	16.7	mm/m/°C
Modulus Elasticity	19.6	GPa
Electrical Resistivity	73	μohm/cm
Density	7.83	g/cm3

CHEMICAL COMPOSITION

(% by weight)

Element	Min	Max
C	-	0.08
Mn	8	10
Ni	5.5	7.5
Cr	19	21.5
Fe	Balance	
Mo	1.5	3
N	0.15	0.4
Si	-	1
P	-	0.06
S	-	0.03