



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	
	ksi (min)	MPa (min)	ksi (min)	MPa (min)
Tensile Rm	95	655	142	979
Tensile Rm				
R.p. 0.2% Yield	48	330	120	827
R.p. 0.2% Yield				
Elongation (2" or 4D gl)	35	7.3	20	14.3

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/cm ³

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