STAINLESS STEEL

ALLOYS 316/316L

(UNS S31600/S31603)

TUBING APPLICATIONS

Alloys 316/316L are one of the most commonly used austenitic stainless steels.

Grade 316 contains more carbon, is more liable to weld decay and is effective in acidic environments. Grade 316L contains less carbon, is better for avoiding weld corrosion and is good for high-temperature and high-corrosion use. Both grades are durable and a great choice for high-stress situations.

AVAILABLE TUBE PRODUCT FORMS

STRAIGHT
COILED
SEAMLESS
SEAM WELDED AND COLD DRAWN
SEAM WELDED, COLD DRAWN AND ANNEALED

TYPICAL MANUFACTURING SPECIFICATIONS

ASTM A213 ASME SA213
ASTM A269
ASTM A312
ASTM A632

Also individual customer specifications.

TYPICAL APPLICATIONS

Process Engineering
Control Lines
High Performance Liquid Chromatography (HPLC)
Heat Exchangers
Condensers
Semiconductors
Medical Implants (Including pins, screws and implants)

INDUSTRIES PREDOMINANTLY USING THIS GRADE

OIL AND GAS
CHEMICAL PROCESSES
HIGH PERFORMANCE
COMMERCIAL

TECHNICAL DATA

MECHANICAL PROPERTIES

Temper	Annealed			Cold worked (approx. 20%)		
Material	316	316L		316	316L	
Tensile Rm	75	70	ksi (min)	102 - 131		ksi (min)
Tensile Rm	515	485	MPa (min)	700 - 900		MPa (min)
R.p. 0.2% Yield	30	27	ksi (min)	73 -102		ksi (min)
R.p. 0.2% Yield	205	182	MPa (min)	500 - 700		MPa (min)
Elongation (2" or 4D gl)	40	40	% (min)	40		% (min)

PHYSICAL PROPERTIES (Room Temperature)

Specific Heat (0-100°C)	500	J.kg-1.°K-1
Thermal Conductivity	16.3	W.m -1.°K-1
Thermal Expansion	15.9	mm / m / °C
Modulus Elasticity	193	GPa
Electrical Resistivity	7.4	µohm / cm
Density	7.99	g / cm3

CHEMICAL COMPOSITION (% by weight)

	316		316L	
Element	Min	Max	Min	Max
C	-	0.08	-	0.035
Mn	-	2	-	2
Ni	10	14	10	15
Cr	16	18	16	18
S	2	3	2	3
N	-	0.03	-	0.03
Si	-	1	-	1
P	-	0.045	-	0.045

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