

STAINLESS STEEL

SURGICAL IMPLANT 316L



Surgical Implant 316L (UNS S31673)

Surgical Implant 316L is a double melted stainless steel, regarded as a medical grade, this stainless steel is double melted to achieve high levels of purity and cleanliness. It has excellent resistance to both general and intergranular corrosion, and pitting and crevice corrosion. The double melting allows for superior surface finish.

Surgical Implant 316L stainless steel is our most commonly sold medical stainless steel. Breaking down the name, this is a low-carbon version of 316 that has been remelted to reduce impurities. Beyond removing impurities, this process, in combination with the unique nickel and chromium content of 316, tends to facilitate the formation of the surface chromium oxide layer that makes stainless steel corrosion resistant. There is some belief that Surgical Implant 316L forms a more substantial surface layer, and that this plays a strong role in protecting the host body from reactions to the nickel content of the material.

AVAILABLE TUBE PRODUCT FORMS

STRAIGHT

SEAMLESS

SEAMLESS

TYPICAL MANUFACTURING SPECIFICATIONS

ASTM F138

ASTM F2181

Also individual customer specifications.

TYPICAL APPLICATIONS

ORTHOPEDIC IMPLANTS

TRAUMA NAILS

NEUROLOGICAL APPLICATIONS

SURGICAL INSTRUMENTS

CHROMATOGRAPHY COLUMNS

INDUSTRIES PREDOMINANTLY USING THIS GRADE

MEDICAL

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)



Technical Data

MECHANICAL PROPERTIES				
Temper	Annealed		Cold worked	
Tensile Rm	75	ksi (min)	125	ksi (min)
Tensile Rm	515	MPa (min)	860	MPa (min)
R.p. 0.2% Yield	30	ksi (min)	100	ksi (min)
R.p. 0.2% Yield	205	MPa (min)	690	MPa (min)
Elongation (2" or 4D gl)	35	% (min)	15	% (min)

PHYSICAL PROPERTIES (Room Temperature)		
Specific Heat (0-100°C)	485	J.kg ⁻¹ .°K ⁻¹
Thermal Conductivity	16.3	W.m ⁻¹ .°K ⁻¹
Thermal Expansion	16.5	mm/m/°C
Modulus Elasticity	200	GPa
Electrical Resistivity	7.4	μohm/cm
Density	7.99	g/cm ³

CHEMICAL COMPOSITION (% by weight)		
Element	Min	Max
C	-	0.03
Mn	-	2
Ni	13	15
Cr	17	19
Mo	2	3
S	-	0.1
Si	-	0.75
P	-	0.25
N	-	0.10