STAINLESS STEEL

ALLOY 316LN

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TUBING APPLICATIONS

Alloy 316LN (UNS S31653)

316LN (UNS S31653) is a lowcarbon, nitrogen-enhanced version of Type 316 molybdenum-bearing austenitic stainless steel. The Type 316 alloys are more resistant to general corrosion and pitting/crevice corrosion than the conventional chromium-nickel austenitic stainless steels such as Type 304. They also offer higher creep, stress-rupture and tensile strength at elevated temperature.

The nitrogen in Type 316LN adds additional resistance to sensitization in some circumstances and it also provides some solid solution hardening, raising its minimum specified yield strength compared to Type 316L stainless steel. Like Types 316 and 316L, the Type 316LN alloy also offers good resistance to general corrosion and pitting/crevice corrosion.

AVAILABLE TUBE PRODUCT FORMS
STRAIGHT
COILED
SEAMLESS

TYPICAL MANUFACTURING SPECIFICATIONS
ASTM F138
ASTM F2181
Also individual customer specifications.

TYPICAL APPLICATIONS
ORTHOPAEDIC IMPLANTS
TRAUMA NAILS
NEUROLOGICAL APPLICATIONS
SURGICAL INSTRUMENTS

INDUSTRIES PREDOMINANTLY USING THIS GRADE
MEDICAL
CHEMICAL PROCESSES
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	µm/µm/°C
Modulus Elasticity	200	GPa
Electrical Resistivity	7.4	µohm/cm
Density	7.99	g/cm3

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

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SPECIALTY METAL PRODUCTS