

# STAINLESS STEEL 316L



## SS 316L (UNS S31603)

SS 316L is an austenitic Chromium-Nickel stainless steel with superior corrosion resistance. The low carbon content reduces susceptibility to carbide precipitation during welding. This permits usage in severe corrosive environments such as isolator diaphragms.

### GENERAL INFORMATION

The alloy can be formed from the annealed temper by stamping and deep drawing. Joining is accomplished by brazing and welding. The Molybdenum in the alloy composition provides excellent strength up through 800° F in applications.

### AVAILABILITY

SS 316L is available from Hamilton Precision Metals as strip product from 0.0005" to 0.050" (0.0127 mm to 1.27 mm) in widths up to 12.0" (304.8 mm). It is also available in foil as thin as 0.000200" (0.00508 mm) in widths of 4.0" (101.6 mm) maximum. The material conforms to AMS 5507, ASTM A240, FED QQS766 and UNS S31603.



## Technical Data

TYPICAL MECHANICAL PROPERTIES <sup>1</sup>		
	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	90,000 PSI	180,000 PSI
Yield Strength (0.2% Offset)	42,000 PSI	160,000 PSI
Elongation in 2" *	40%	2%
Modulus of Elasticity (Tension)	28 X 10 <sup>6</sup> PSI	-
Poisson's Ratio	0.25	-

\*The measured elongation will be less as thickness decreases to 0.002" and less.

<sup>1</sup> These values may be adjusted by control of process variables - consult HPM for desired values.

NOMINAL COMPOSITION	
Chromium	17.2%
Nickel	10.9%
Molybdenum	2.1%
Manganese	1.6%
Carbon	0.02%
Iron	Balance

PHYSICAL PROPERTIES <sup>2</sup>	
Density	0.29 lbs/cu.in.
Melting Point (Approx.)	1370°C
Electrical Resistivity @ R.T.	74 Microhm · cm
Thermal Expansion Coefficient (0° to 100°C)	16.0 x 10 <sup>-6</sup> /°C
Thermal Conductivity @ 100°C	16.3 W/m · K
Magnetic Attraction	
Annealed	None
Cold Rolled	Slight
Magnetic Attraction (Annealed: H = 200 oersteds)	1.02 Max.

<sup>2</sup> Typical values to guide alloy selection but are not a guarantee of minimum or maximum.

Disclaimer: The information contained within this data sheet is for guidance only and is not intended for warranty of individual application - express or implied.