



Hamilton Precision Metals
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TECHNICAL DATA SHEET

SS 316L

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.

NOMINAL COMPOSITION:

Chromium	17.2%	Manganese	1.6%
Nickel	10.9%	Carbon	.02%
Molybdenum	2.1%	Iron	Balance

TYPICAL MECHANICAL PROPERTIES:¹

	<u>ANNEALED</u>	<u>COLD ROLLED</u>
Ultimate Tensile Strength	90,000 PSI	180,000 PSI
Yield Strength (.2% Offset)	42,000 PSI	160,000 PSI
Elongation in 2" *	40%	2%
Modulus of Elasticity (Tension)	28 x 10 ⁶ PSI	
Poisson's Ratio	0.25	

*The measured elongation will be less as thickness decreases to .002" and less.

¹ These values may be adjusted by control of process variables – consult HPM for desired values.

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PHYSICAL PROPERTIES:²

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 ⁻⁶ /°C
Thermal Conductivity @ 100° C	-	16.3 W/m· K
Magnetic Attraction		
Annealed	-	None
Cold Rolled	-	Slight
Magnetic Permeability (Annealed: H = 200 oersteds)	-	1.02 Max.

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 .0005" to .050" in widths up to 12.0". It is also available in foil as thin as .000200" in widths of 4.0" maximum. The material conforms to AMS 5507, ASTM A240, FED QQS766 and UNS S31603.

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