



Hamilton Precision Metals
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TECHNICAL DATA SHEET

SS 301

SS 301 is an austenitic Chromium-Nickel stainless steel capable of attaining high strength with moderate cold working. The Combination of high strength and good ductility makes it suitable for numerous mechanical switches as well as electronic and computer spring components.

NOMINAL COMPOSITION:

Chromium	17.0%	Carbon	.10%
Nickel	7.4%	Iron	Balance

TYPICAL MECHANICAL PROPERTIES:¹

	<u>ANNEALED</u>	<u>COLD ROLLED</u>
Ultimate Tensile Strength	110,000 PSI	300,000 PSI
Yield Strength (.2% Offset)	40,000 PSI	280,000 PSI
Elongation in 2" *	50%	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 specific melt chemistry and process variables to obtain discrete ranges of strength and ductility. Consult Hamilton Precision Metals for desired limits to meet application need.

SS 301

PHYSICAL PROPERTIES:²

Density	-	0.287 lbs.cu.in.
Melting Point (Approx.)	-	1400° C
Electrical Resistivity @ R.T.	-	72 Microhm· cm
Thermal Expansion Coefficient (0° to 100° C)	-	16.9 x 10 ⁻⁶ /° C
Thermal Conductivity @ 100°C	-	16.3 W/m· K
Magnetic Attraction		
Annealed	-	None
Cold Rolled	-	Yes

GENERAL INFORMATION:

The alloy is readily formed in the annealed temper. Ductility decreases with increased cold rolled strength but not to the degree that would occur with SS 302. It is not recommended for deep drawing. SS 301 can be welded by all conventional processes except oxy-acetylene. The weld should not make contact with electrolytes to prevent intergranular corrosion. SS 301 is resistant to atmospheric corrosion and is additionally resistant to mildly corrosive mediums. The combination of narrow strength bands and close thickness tolerance provided by Hamilton Precision Metals is the key to repeatable response characteristic in spring and switch applications.

AVAILABILITY:

SS 301 is available from Hamilton Precision Metals as strip product in thicknesses 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 ASTM A666, MIL-S-5059, QQS-766, and UNS 30100.

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