

STAINLESS STEEL

301



SS 301 (UNS 30100)

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.

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 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 ASTM A666, MIL-S-5059, QQS-766, and UNS 30100.



Technical Data

TYPICAL MECHANICAL PROPERTIES ¹		
	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	110,000 PSI	300,000 PSI
Yield Strength (0.2% Offset)	40,000 PSI	280,000 PSI
Elongation in 2" *	50%	2%
Modulus of Elasticity (Tension)	29 X 10 ⁶ PSI	-
Poisson's Ratio	0.25	-

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

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

NOMINAL COMPOSITION	
Chromium	17.0%
Nickel	7.4%
Carbon	0.10%
Iron	Balance

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

² 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.