

STAINLESS STEEL 304L



SS 304L (UNS S30403)

SS 304L is an austenitic Chromium-Nickel stainless steel offering the optimum combination of corrosion resistance, strength, and ductility. These attributes make it a favorite for many mechanical switch components. The low carbon content reduces susceptibility to carbide precipitation during welding.

GENERAL INFORMATION

The alloy is readily formed in the annealed temper. SS 304L may be joined by all commonly used brazing and welding methods including oxyacetylene. The corrosive resistance to acids is generally very good with the exception of halogen acids.

AVAILABILITY

SS 304L 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 A240, ASTM A666, FED QQ-S-766, MIL-S-4043, UNS S30403.



Technical Data

TYPICAL MECHANICAL PROPERTIES ¹		
	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	100,000 PSI	195,000 PSI
Yield Strength (0.2% Offset)	40,000 PSI	175,000 PSI
Elongation in 2" *	40%	2%
Modulus of Elasticity (Tension)	29 X 10 ⁶ PSI	25 x 10 ⁶ PSI
Poisson's Ratio	0.29	-

*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	18.2%
Nickel	8.5%
Manganese	1.6%
Silicon	0.5%
Carbon	0.015%
Iron	Balance

PHYSICAL PROPERTIES ²	
Density	0.284 lbs./cu.in.
Melting Point (Approx.)	1400°C
Electrical Resistivity @ R.T.	72 Microhm · cm
Thermal Expansion Coefficient (0° to 100°C)	17.3 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.

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