

STAINLESS STEEL 302



SS 302 (UNS S30200, and UNS S30400)

SS 302 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.

GENERAL INFORMATION

The alloy is readily formed in the annealed temper. SS 302 may be joined by all commonly used brazing and welding methods including oxyacetylene. Caution should be used to avoid cooling slowly through the range of 900° to 1600°F where carbide network could form and reduce corrosion resistance. This characteristic is diminished due to the typically low carbon composition of Hamilton's SS 302. The corrosive resistance to acids is generally very good with the exception of halogen acids

AVAILABILITY

SS 302 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-763, MIL-S-5059, UNS S30200, and UNS S30400.



Technical Data

TYPICAL MECHANICAL PROPERTIES ¹		
	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	100,000 PSI	190,000 PSI
Yield Strength (0.2% Offset)	40,000 PSI	185,000 PSI
Elongation in 2" *	40%	2%
Modulus of Elasticity (Tension)	28 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 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.

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.

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NOMINAL COMPOSITION	
Chromium	18.2%
Nickel	8.5%
Manganese	1.6%
Silicon	0.5%
Carbon	0.06%
Iron	Balance