



## Alloy 304

**Alloy Designation:** (UNS S30403)

**Specifications:** ASTM A269 / ASTM A213 EAW

**Typical Size Ranges:** OD (.02"-1.00")

**Available Product Forms:**

Annealed to Full Hard, in Coiled or Straight form

### General Description and Applications:

Stainless steel 304 is the most basic variety of austenitic stainless steel. It is ductile, has high corrosion resistance, and has relatively high tensile strength. Alloy 304 is commonly used in the beverage, pharmaceutical, and oil and gas industries. HandyTube's 304 alloy is a low carbon variant, which makes the metal less prone to sensitization during the annealing process.

### Commitment to Quality:

ISO 9001-  
CERTIFIED



SHIPBUILDING  
CERTIFICATIONS



HIGH PRESSURE  
APPLICATIONS



AD-2000-Merkblatt-W0

**PED**  
2014 / 68 / EU

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## Chemical Properties as per Specs:

CHEMICAL COMPOSITION BY WEIGHT PERCENT															
Ni	Cr	Fe	Mo	Al	Ti	Nb	Co	Ta	Mn	Cu	N	C	S	Si	P
8.0 - 12.0	18.0 - 20.0	Bal.	-	-	-	-	-	-	2.00 Max	-	-	.035 Max	.03 Max	1.0 Max	0.045

### PREN CALCULATION AND NUMBER:

- $PREN = Cr + 3.3(Mo + 0.5W) + 16N$
- MIN PREN = 18
- MAX PREN = 20
- PREN Range: 18 - 20

MECHANICAL PROPERTIES	
Ultimate Tensile Strength	70 ksi Minimum (482.6 MPa)
Yield Strength	25 ksi Minimum (172.4 MPa)
% Elongation to Failure	35% Minimum
Hardness	90 HRB Max
Young's Modulus	28.4x10 <sup>6</sup> ksi (196 GPa)

PHYSICAL PROPERTIES	
Density	0.289 lbs/in <sup>3</sup> or 8.0 g/cm <sup>3</sup>
Melting Point	2550 - 2650°F or 1400 - 1450°C
Coefficient of Thermal Expansion	9.6 (µin/in-°F)
Specific Heat	0.12 BTU/lb-°F
Thermal Conductivity	16.2 (W/m.K)
Electrical Resistivity	72 µΩm

### ANNEALING SUGGESTION:

- 304L is best annealed between the temperatures of 1900-2150 degrees Fahrenheit or 1038-1177 degrees Celsius.

Disclaimer: Always consult with design engineer, the information contained in this data sheet is for guidance only.