

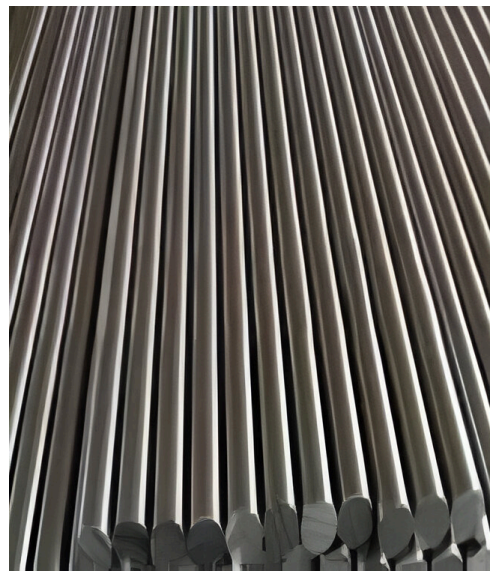
304/304L Stainless Steel

304/304L STAINLESS STEEL DATASHEET

304 (originally 18-8 stainless) is one of the largest and most commonly available grades of austenitic stainless steel, 304 is a versatile grade of stainless steel that can be used in many different applications and industries. 304L is a low carbon version and is considered dual certified as it is produced to be both 304 and 304L.

Common industry/applications are: Aerospace, Chemical Processing, Food and Beverage Processing, Oil and Gas, Sanitary or Cryogenic, and Pressure Containing.

Product forms include round bar, hex, square, rectangle & flat bar, plate & sheet, hollow bar, tubing and pipe, and forgings.



Standards

- UNS S30400
- UNS S30403
- ASTM A240
- ASTM A276/A479
- ASME SA-240
- ASME SA276/SA479

Physical Properties

- Density: 0.285LB/in³ (7.90g/cm³)
- Melting Point: 2550–2590°F (1398–1421°C)
- Modulus of Elasticity: 29.0x10⁶psi (200 GPa)
- Magnetic Permeability: 1.02 Max @ 200 H (Annealed)

Characteristics

- Excellent resistance to corrosion.
- Good fabrication and formability.
- Good cryogenic strength and toughness.

Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	Cu	Mo
304	0.08 Max	2.00 Max	0.045 Max	0.030 Max	1.00 Max	18.0 - 20.0	8.0 - 10.5	-	-
304L	0.03 Max	2.00 Max	0.045 Max	0.030 Max	1.00 Max	18.0 - 20.0	8.0 - 10.5 *	-	-

* 304L has a Ni range of 8.0–12.0, but to be dual certified material must be within range of 304

Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) % **	Hardness * HRC (BHN)
75 (515)	30 (205)	30%	50%	22 (237)

Mechanical properties can be altered (increased/decreased) by many methods such as cold working or strain hardening, or by the addition or modification of chemistry. Grades such as 304L Condition B are strain hardened, while grades like 304LNi, or 304H are grades with altered chemistry. However, these grades are more specialized and may not be available in all forms and sizes.

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