

304/304L Stainless Steel Material Grade

Type 304L stainless steel serves a wide range of applications. It withstands ordinary rusting in architecture, it is resistant to food processing environments, it resists organic chemicals, dyestuffs, and a wide variety of inorganic chemicals.

Principal Design Features: A low carbon version of type 304 stainless. 304L is used almost interchangeably with 304 but is preferred for welding operations. It offers a good combination of strength, corrosion resistance and is easily fabricated.

Applications: The list for 304L stainless steel is endless. Almost every conceivable industry uses some of this material in some way. Everything from stove tops to ball point pen barrels to flatware to fasteners has been fabricated from this alloy.

Machinability: Slow speeds and heavy feeds will minimize this alloys tendency to work harden. Due to long stringy chips, the use of chip breakers is advisable. Many companies now offer premium machinability grades, such as CarTech with their Project 70 and 7000 series.

Welding: All fusion and resistance processes have been successfully employed in welding 304 stainless. AWS E/ER308 or 312 filler metal is recommended. Its low carbon, means that the is less carbide precipitation at the weld boundaries resulting in stronger welds.

304L Chemistry Data

Carbon	0.03 max
Chromium	18 - 20
Iron	Balance
Manganese	2 max
Nickel	8 - 12
Phosphorous	0.045 max
Silicon	1 max
Sulphur	0.03 max

304L Physical Data

Density (lb / cu. in.)	0.29
Specific Gravity	7.9
Specific Heat (Btu/lb/Deg F - [32-212 Deg F])	0.12
Electrical Resistivity (microhm-cm (at 68 Deg F))	432
Melting Point (Deg F)	2650
Modulus of Elasticity Tension	28

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