



TECHNICAL DATA SHEET

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304L Stainless Steel / SUS304L

Low Carbon Austenitic Stainless Steel

Document Control

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Specification	ASTM A240 / A276 / A312 by product form	Product Form / UNS	Plate, sheet, bar, pipe, tube / UNS S30403

Engineering use note: Starter-library values are intended for engineering screening and template standardization. Verify against the latest governing specification, drawing, PO, and MTR before production release.

1. General Description

304L is the low-carbon variant of 304 and is commonly selected when weldability and resistance to sensitization after welding are important. It keeps the general-purpose corrosion resistance and formability of 304 while lowering the risk of chromium carbide precipitation in the heat-affected zone.

2. Chemical Composition (wt%)

Property	Value
Chromium (Cr)	18.0-20.0
Nickel (Ni)	8.0-12.0
Carbon (C)	<=0.03
Manganese (Mn)	<=2.00
Silicon (Si)	<=0.75
Phosphorus (P)	<=0.045
Sulfur (S)	<=0.03
Nitrogen (N)	<=0.10
Iron (Fe)	Balance

3. Mechanical Properties

Property	Value
Condition	Annealed

Property	Value
Ultimate tensile strength	≥ 485 MPa
0.2% yield strength	≥ 170 MPa
Elongation	≥ 40 %
Hardness	≤ 92 HRB typical wrought

4. Physical Properties

Property	Value
Density	8.00 g/cm ³
Elastic modulus	193 GPa
Thermal conductivity	16.2 W/m.K
Melting range	1400-1450 C

5. Heat Treatment / Processing

Normally used in the annealed condition. 304L is not hardenable by heat treatment; strength increase is by cold work.

6. Corrosion / Environmental Performance

Good general corrosion resistance for atmospheric, food, and light process service. The low-carbon chemistry improves welded performance where post-weld heat treatment is not planned.

7. Key Characteristics

- Excellent weldability
- Good formability
- Improved resistance to sensitization versus 304
- Broad availability

8. Typical Applications

- Welded tanks
- Piping
- Food and beverage equipment
- Architectural fabrication
- General corrosion-resistant hardware

9. Standards & Equivalents

ASTM A240
ASTM A276
ASTM A312
JIS SUS304L
UNS S30403
EN 1.4307



10. Notes & Limitations

Select 304L instead of 304 when welded corrosion performance or code compliance specifically requires low carbon material.