TECHNICAL DATA SHEET

310 Stainless Steel / SUS310S

High-Temperature Austenitic Stainless Steel

VTECH MATERIALS LIBRARY

Document Control

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Issue Date	2026-04-08	**Owner**	Engineering
Specification	ASTM A240 Type 310/310S / JIS SUS310S	**Product Form / UNS**	Sheet, plate, and heat-resistant fabrication stock / UNS S31000 / S31008

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

310 is a high-temperature austenitic stainless steel used in the VTECH library for quick material screening and template standardization.

2. Chemical Composition (wt%)

Property	Value
Chromium (Cr)	24.0-26.0
Nickel (Ni)	19.0-22.0
Carbon (C)	<= 0.25 (310), <= 0.08 (310S)
Manganese (Mn)	<= 2.0
Silicon (Si)	<= 1.5
Phosphorus (P)	<= 0.045
Sulfur (S)	<= 0.030
Iron (Fe)	Balance

3. Mechanical Properties

Property	Value
Condition	Annealed typical wrought
Ultimate tensile strength	>= 515 MPa
Yield strength (0.2% offset)	>= 205 MPa
Elongation	>= 40%
Hardness	<= 95 HRB

4. Physical Properties

Property	Value
Density	7.90 g/cm3
Elastic modulus	200 GPa
Thermal conductivity	~14 W/m-K
Service note	Excellent oxidation resistance to high temperature service

5. Heat Treatment / Processing

Used primarily for heat-resistant service. Solution annealing restores corrosion resistance and ductility after fabrication.

6. Corrosion / Environmental Performance

Very good oxidation and scaling resistance at elevated temperature. Aqueous corrosion resistance is good, though this alloy is typically chosen for furnace service.

7. Key Characteristics

- High chromium and nickel for heat resistance
- Good oxidation resistance in cyclic and continuous service
- Suitable for furnace components and heat treating fixtures

8. Typical Applications

- Radiant tubes
- Furnace parts
- Heat exchangers
- Burner components

9. Standards / Cross-References

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