



TECHNICAL DATA SHEET

314 Stainless Steel / SUS314

High-Silicon Heat-Resistant Austenitic Stainless Steel

VTECH
MATERIALS
LIBRARY

Document Control

Document No.	TDS-SS-314-A240	Revision	A
Issue Date	2026-04-08	Owner	Engineering
Specification	ASTM A240 Type 314 / JIS SUS314	Product Form / UNS	Sheet, plate, and heat-resistant fabrication stock / UNS S31400

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

314 is a high-silicon heat-resistant austenitic stainless steel used in the VTECH library for quick material screening and template standardization.

2. Chemical Composition (wt%)

Property	Value
Chromium (Cr)	23.0-26.0
Nickel (Ni)	19.0-22.0
Silicon (Si)	1.5-3.0
Carbon (C)	<= 0.25
Manganese (Mn)	<= 2.0
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	>= 35%
Hardness	<= 95 HRB

4. Physical Properties

Property	Value
Density	7.92 g/cm3
Elastic modulus	200 GPa
Thermal conductivity	~14 W/m-K
Service note	Good scaling resistance for very high temperature exposure

5. Heat Treatment / Processing

Selected for oxidation and scaling resistance. Solution anneal after severe fabrication when required by specification.

6. Corrosion / Environmental Performance

Strong resistance to oxidation and scale formation at elevated temperature. Usually applied to dry high-temperature service rather than wet chloride environments.

7. Key Characteristics

- Higher silicon than 310 family
- Very good furnace and radiant service behavior
- Used where scale resistance is critical

8. Typical Applications

- Kiln hardware
- Furnace muffles
- Retorts
- Radiant elements and supports

9. Standards / Cross-References

ASTM A240 Type 314

JIS SUS314

UNS S31400