



TECHNICAL DATA SHEET
301 Stainless Steel / SUS301
Work-Hardening Austenitic Stainless Steel

VTECH
MATERIALS
LIBRARY

Document Control

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Specification	ASTM A240 Type 301 / JIS SUS301	Product Form / UNS	Sheet, strip, and spring stock / UNS S30100

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

301 is a work-hardening austenitic stainless steel used in the VTECH library for quick material screening and template standardization.

2. Chemical Composition (wt%)

Property	Value
Chromium (Cr)	16.0-18.0
Nickel (Ni)	6.0-8.0
Carbon (C)	<= 0.15
Manganese (Mn)	<= 2.0
Silicon (Si)	<= 1.0
Phosphorus (P)	<= 0.045
Sulfur (S)	<= 0.030
Nitrogen (N)	<= 0.10

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	7.93 g/cm3
Elastic modulus	193 GPa
Thermal conductivity	~16 W/m-K
Melting range	~1400-1450 C

5. Heat Treatment / Processing

Not hardenable by heat treatment. This grade is selected for its high work-hardening rate; spring tempers are obtained by cold rolling.

6. Corrosion / Environmental Performance

Corrosion resistance is similar to 304 in many atmospheric environments, but cold-worked tempers may be preferred for strength rather than corrosion-critical service.

7. Key Characteristics

- Excellent work-hardening response
- Good spring properties in cold-rolled tempers
- Useful when high strength is needed from thin gauge strip

8. Typical Applications

- Springs and clips
- Railcar and automotive trim
- Flexible couplings
- Aircraft structural details

9. Standards / Cross-References

ASTM A240 Type 301

JIS SUS301

UNS S30100