



TECHNICAL DATA SHEET
409 Stainless Steel / SUS409
Titanium-Stabilized Ferritic Stainless Steel

VTECH
MATERIALS
LIBRARY

Document Control

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Specification	ASTM A240 Type 409 / JIS SUS409L	Product Form / UNS	Sheet, strip, and exhaust components / UNS S40900

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

409 is a titanium-stabilized ferritic stainless steel used in the VTECH library for quick material screening and template standardization.

2. Chemical Composition (wt%)

Property	Value
Chromium (Cr)	10.5-11.75
Titanium (Ti)	6 x (C+N) min, <= 0.75
Carbon (C)	<= 0.08
Manganese (Mn)	<= 1.0
Silicon (Si)	<= 1.0
Phosphorus (P)	<= 0.045
Sulfur (S)	<= 0.030
Iron (Fe)	Balance

3. Mechanical Properties

Property	Value
Condition	Annealed typical wrought
Ultimate tensile strength	>= 380 MPa
Yield strength (0.2% offset)	>= 170 MPa
Elongation	>= 20%
Hardness	<= 88 HRB

4. Physical Properties

Property	Value
Density	7.75 g/cm3
Elastic modulus	200 GPa
Thermal conductivity	~25 W/m-K
Thermal expansion	Lower than austenitic stainless grades

5. Heat Treatment / Processing

Not hardenable by heat treatment. Usually supplied annealed for fabrication; strength changes mainly by cold work.

6. Corrosion / Environmental Performance

Moderate corrosion resistance better than carbon steel and suitable for exhaust condensate and atmospheric exposure, but below 304-family grades.

7. Key Characteristics

- Economical ferritic stainless
- Good oxidation resistance in automotive exhaust temperatures
- Magnetic in all conditions

8. Typical Applications

- Automotive exhaust systems
- Mufflers
- Catalyst shells
- General heat-resistant stampings

9. Standards / Cross-References

- ASTM A240 Type 409
- JIS SUS409L
- UNS S40900