TECHNICAL DATA SHEET

410 Stainless Steel / SUS410

General Purpose Martensitic Stainless Steel

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Document Control

Document No.	TDS-SS-410-A276	**Revision**	A
Issue Date	2026-04-07	**Owner**	Engineering
Specification	ASTM A276 Type 410 / JIS SUS410	**Product Form / UNS**	Bar, plate, forgings by product form / UNS S41000

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

410 is a basic 12% chromium martensitic stainless steel used where moderate corrosion resistance and the ability to harden by heat treatment are required. It is commonly selected for shafts, valve trim, and wear-resistant components.

2. Chemical Composition (wt%)

Property	Value
Chromium (Cr)	11.5-13.5
Carbon (C)	<=0.15
Manganese (Mn)	<=1.00
Silicon (Si)	<=1.00
Phosphorus (P)	<=0.04
Sulfur (S)	<=0.03
Iron (Fe)	Balance

3. Mechanical Properties

Property	Value
Condition	Annealed typical wrought
Ultimate tensile strength	>= 480 MPa
0.2% yield strength	>= 275 MPa

Property	Value
Elongation	>= 20 %
Hardness	<= 95 HRB annealed typical

4. Physical Properties

Property	Value
Density	7.75 g/cm3
Elastic modulus	200 GPa
Thermal conductivity	24.9 W/m.K
Melting range	1480-1530 C

5. Heat Treatment / Processing

410 is hardenable by quenching and tempering. Final hardness and toughness depend strongly on austenitizing, quench practice, and tempering temperature.

6. Corrosion / Environmental Performance

Moderate corrosion resistance, generally lower than 304 and 316 austenitic grades. Best used in mild atmospheric, steam, and water service where wear resistance is also needed.

7. Key Characteristics

- Heat treatable
- Useful wear resistance
- Good strength-to-cost balance
- Magnetic

8. Typical Applications

- Valve parts
- Pump shafts
- Fasteners
- Turbine hardware
- General wear parts

9. Standards & Equivalents

ASTM A276 Type 410
JIS SUS410
UNS S41000
EN 1.4006

10. Notes & Limitations

Performance is highly condition dependent. Confirm the required hardness, temper condition, and impact requirements before release.