



TECHNICAL DATA SHEET

440 Stainless Steel / SUS440C Family

High-Carbon Martensitic Stainless Steel

VTECH
MATERIALS
LIBRARY

Document Control

Document No.	TDS-SS-440-A276	Revision	A
Issue Date	2026-04-08	Owner	Engineering
Specification	ASTM A276 Type 440A / 440B / 440C / JIS SUS440	Product Form / UNS	Bar, blade, and bearing stock / UNS S44002 / S44003 / S44004

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

440 is a high-carbon martensitic 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
Carbon (C)	0.60-1.20 depending on subtype
Manganese (Mn)	<= 1.0
Silicon (Si)	<= 1.0
Molybdenum (Mo)	<= 0.75 typical option
Phosphorus (P)	<= 0.040
Sulfur (S)	<= 0.030
Iron (Fe)	Balance

3. Mechanical Properties

Property	Value
Condition	Hardened and tempered typical 440C
Ultimate tensile strength	High; condition dependent
Yield strength (0.2% offset)	Condition dependent
Hardness	~56-60 HRC typical 440C
Engineering note	Properties depend strongly on subtype and heat treatment

4. Physical Properties

Property	Value
Density	7.70 g/cm3
Elastic modulus	200 GPa
Thermal conductivity	~24 W/m-K
Melting range	~1450-1510 C

5. Heat Treatment / Processing

Hardenable by austenitize, quench, and temper cycle. Subtype and target hardness must be defined on the drawing or PO.

6. Corrosion / Environmental Performance

Higher corrosion resistance than plain bearing steels, but below austenitic grades. Best used when hardness and wear are primary design drivers.

7. Key Characteristics

- Very high achievable hardness
- Good wear resistance and polishability
- Common knife, valve, and bearing alloy

8. Typical Applications

- Bearings
- Cutlery and blades
- Valve seats
- Wear parts

9. Standards / Cross-References

ASTM A276 Type 440A/440B/440C

JIS SUS440

UNS S44002 / S44003 / S44004