



EN9 Steel: Composition, Properties, Equivalents & Applications | Steelmet Industries India

Description

EN9 steel, also known as **070M55**, is a medium carbon steel renowned for its excellent wear resistance and high tensile strength. Its balanced composition makes it ideal for components subjected to high stress and wear. At **Steelmet Industries**, we supply EN9 steel in various forms, including bright bars, hot-rolled bars, and custom shapes, ensuring top-notch quality and precision.

Chemical Composition

Element	Percentage (%)
Carbon (C)	0.50 - 0.60
Manganese (Mn)	0.60 - 0.90
Silicon (Si)	0.10 - 0.35
Sulphur (S)	≤ 0.04
Phosphorus (P)	≤ 0.04

Mechanical Properties

Property	Value (Typical)
Tensile Strength	600 - 800 MPa
Yield Strength	350 - 500 MPa
Hardness (Annealed)	150 - 170 HB
Hardness (Hardened)	Up to 50 HRC
Elongation	10% - 15%

Note: Values may vary based on heat treatment and section size.

Equivalent Grades

Standard	Grade
AISI/SAE	1055
DIN	C55 (1.0535)
JIS	S55C
IS	55C8
BS	070M55

Applications

EN9 steel is widely used in engineering applications requiring high strength and wear resistance:

- Gears and sprockets
- Shafts and axles
- Crankshafts
- Connecting rods
- Machine tools
- Automotive components
- Structural parts in construction

Machinability, Weldability & Heat Treatment

Machinability: EN9 offers good machinability in the annealed condition, allowing for precise machining operations.

Weldability: Welding EN9 requires caution due to its higher carbon content. Preheating and post-weld heat treatment are recommended to avoid cracking.

Heat Treatment:

- **Annealing:** Improves ductility and machinability.
 - **Normalizing:** Enhances strength and toughness.
 - **Hardening:** Achieves high surface hardness for wear resistance.
 - **Tempering:** Reduces brittleness after hardening.
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Forms Supplied by Steelmet Industries

At Steelmet Industries, we offer EN9 steel in various forms:

- **Bright Bars:** Rounds, squares, hexagons, and flats with precise dimensions and excellent surface finish.
- **Hot Rolled Bars:** Suitable for forging and machining applications.
- **Custom Shapes:** Tailored to specific requirements, including D-shapes and special profiles.

Our products adhere to strict quality standards, ensuring tight tolerances and superior mechanical properties.

Why Choose Steelmet Industries for EN9 Steel?

- **Quality Assurance:** Comprehensive testing and certification for every batch.
 - **Customization:** Tailored solutions to meet specific application needs.
 - **Timely Delivery:** Efficient logistics ensuring prompt supply.
 - **Technical Support:** Expert guidance on material selection and processing.
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Documentation & Compliance

We provide:

- **Test Certificates:** Detailed chemical and mechanical analysis.
- **Dimensional Reports:** Ensuring adherence to specified tolerances.
- **Compliance:** Materials conform to IS, ASTM, DIN, and JIS standards.

ð??? Contact & Inquiry

For high-quality EN9 steel products, reach out to **Steelmet Industries:**

ð???• Website: <https://www.steelmet.in>

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Date

12/06/2026

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