



## ? 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%

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

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## ? Equivalent Grades

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

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## ?? 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
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## ?? 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.

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### 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.

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### ? 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.

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## ? Contact & Inquiry

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

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

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3. EN9 mechanical properties
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5. EN9
6. Steelmet Industries

### Date

06/08/2025

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