

16MnCr5 Steel | Properties, Equivalents, Applications | Steelmet Industries

Steelmet Industries - Bright Bars, Alloy Steels, Free Cutting Steels, Stainless Steels

Description

16MnCr5 is a low-carbon case-hardening steel known for its excellent wear resistance, high surface hardness after carburizing, and good toughness in the core. It is widely used in the manufacture of components requiring a hard surface and strong core. At **Steelmet Industries**, we manufacture and supply **16MnCr5 steel bars** in **hot rolled**, **bright**, and **custom-profiled** forms, made from tested and traceable material to meet the most demanding applications.

ð??? Chemical Composition of 16MnCr5 Steel

Element	Composition (%)
Carbon (C)	0.14 â?? 0.19
Manganese (Mn)	1.00 â?? 1.30
Chromium (Cr)	0.80 â?? 1.10
Silicon (Si)	0.10 â?? 0.40
Sulphur (S)	â?¤ 0.035
Phosphorus (P)	â?¤ 0.035

ð?§ª Mechanical Properties (Typical After Case Hardening)

Property	Value
Core Tensile Strength	650 â?? 850 MPa
Case Hardness	58 â?? 62 HRC
Core Hardness	~28â??34 HRC
Elongation	10 â?? 15%
Impact Resistance	Good (after proper heat treatment)

Properties vary depending on heat treatment and case depth.

ð??• Equivalent Grades of 16MnCr5

Standard	Equivalent Grade
AISI / SAE	5115
DIN / EN	1.7131
IS (India)	16MnCr5 (IS 5517)
JIS	SCM415 (similar)
BS	590M17 (similar)

â??ï¸• Applications of 16MnCr5 Steel

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16MnCr5 is a preferred steel for parts that undergo carburizing and require a combination of:

- High wear resistance at the surface
- Good core toughness and fatigue strength

Common applications include:

- Transmission gears and shafts
- Gearbox components
- Bushings and sprockets
- Pinions and rings
- Timing gear components
- Construction and agricultural machinery parts
- Automotive driveline components

ð??§ Machinability, Weldability & Heat Treatment

- **Machinability**: Good in soft-annealed or normalized state
- **Weldability**: Moderate â?? Preheating is recommended for thick sections
- **Heat Treatment Options**:
  - Carburizing: 870â??950Â°C
  - Hardening: 800â??820Â°C followed by oil quenching
  - Tempering: 150â??200Â°C (to relieve stresses post-hardening)
  - Annealing: ~680â??710Â°C
  - Normalizing: ~870â??900Â°C

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The steel responds well to **deep case hardening**, making it suitable for wear-critical components.

ð?§± 16MnCr5 Steel Bars from Steelmet Industries

We supply **16MnCr5 steel** in:

- **Bright Bars**: Drawn, Peeled, Ground â?? for precision components
- **Hot Rolled Bars**: Rounds, Flats, Squares â?? for forging and machining
- **Custom Profiles**: Hexagons, Round Corner Squares, D-shaped bars
- **Size Range**:
  - Rounds: 12 mm to 90 mm
  - Flats and Profiles: As per customer requirements
- **Tolerances**: ISO H9/H10 or as per specification

- **Supply Condition**: Annealed, Normalized, or Case-Hardened

Every bar is produced with **strict dimensional control**, **low decarburization**, and **verified mechanical and chemical properties**.

ð?• Why Choose Steelmet Industries for 16MnCr5?

â? Manufactured from quality billets (VD route available on request)
â? Available in ready stock or custom mill-made lots
â? Supplied with material test certificates and full traceability
â? Reliable partner for automotive OEMs, gear manufacturers, and machinery builders
â? Option for third-party inspection and NABL-certified lab reports
â? On-time delivery and responsive technical support

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ð??? Certifications & Compliance

- Supplied with **Manufacturer Test Certificate (MTC)**
- Conforms to EN 10084 / IS 5517 and customer specifications
- Optional UT (Ultrasonic Testing), mechanical test reports, and NABL lab tie-ups available

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ð??? Request a Quote

Looking for a reliable supplier of 16MnCr5 steel bars in India?

ð??? Contact **Steelmet Industries** today.

ð??? Website: https://www.steelmet.in
ð??© Enquiry form available online for fast response

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Author
admin

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