



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

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.

? Chemical Composition of 16MnCr5 Steel

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

? Mechanical Properties (Typical After Case Hardening)

Property	Value
Core Tensile Strength	650 – 850 MPa
Case Hardness	58 – 62 HRC
Core Hardness	~28–34 HRC
Elongation	10 – 15%

Property	Value
Impact Resistance	Good (after proper heat treatment)

Properties vary depending on heat treatment and case depth.

? 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)

?? Applications of 16MnCr5 Steel

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

? **Machinability, Weldability & Heat Treatment**

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

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

? **16MnCr5 Steel Bars from Steelmet Industries**

We supply **16MnCr5 steel** in:

- **Bright Bars:** Drawn, Peeled, Ground – for precision components
- **Hot Rolled Bars:** Rounds, Flats, Squares – 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.**

? Why Choose Steelmet Industries for 16MnCr5?

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

? 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

? Request a Quote

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

? Contact **Steelmet Industries** today.

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

? Enquiry form available online for fast response

Category

1. Posts

Tags

1. 16MnCr5 chemical composition
2. 16MnCr5 mechanical properties
3. 16MnCr5 steel supplier
4. 16MnCr5
5. bright bars
6. case hardening steel India
7. hot rolled steel
8. Steelmet Industries

Date

03/08/2025

Author

admin

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