

EN1A Steel | Properties, Equivalents, Applications | Steelmet Industries

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

Description

EN1A, also known as **230M07** or **Free Cutting Mild Steel**, is a low-carbon steel with added sulfur that offers **excellent machinability**. It is the go-to material for mass production on CNC machines and automatic lathes. At **Steelmet Industries**, we offer **EN1A steel bars** in bright and hot rolled forms with excellent surface finish, tight tolerances, and consistent quality.

ð??? Chemical Composition of EN1A Steel

Element	Composition (%)
Carbon (C)	0.07 â?? 0.15
Manganese (Mn)	0.80 â?? 1.20
Sulfur (S)	0.20 â?? 0.30
Phosphorus (P)	â?¤ 0.07
Iron (Fe)	Balance

Note: EN1A is a free-cutting steel. The high sulfur content improves machinability.

ð?§ª Mechanical Properties (Typical in Cold Drawn Condition)

Property	Value
Tensile Strength	370 â?? 540 MPa
Yield Strength	220 â?? 350 MPa
Elongation	~15%
Hardness (BHN)	130 â?? 170
Machinability Rating	100% (Excellent)

ð??• Equivalent Grades of EN1A

Standard	Equivalent Grade
EN	EN1A / 230M07
AISI	1213 / 12L13
IS	14420 (Steel Type 14C6S13)
DIN	9SMn28 / 1.0715
JIS	SUM22
BS	EN1A / 230M07

â??ï¸• Applications of EN1A Steel

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EN1A is widely used for high-speed machining of parts with moderate strength requirements, including:

- Automatic turned parts
- Precision machined components
- Spacers and bushes
- Shafts and studs
- Couplings and connectors
- Valve parts and nipples
- Furniture and hardware components

It is ideal for **mass production**, especially on CNCs and turret lathes where tight tolerances and fast cycle times are critical.

ð??§ Machinability, Weldability & Heat Treatment

- **Machinability**: Excellent â?? best among all carbon steels

- **Weldability**: Limited due to high sulfur content; use EN1A lead-free (EN1A(L)) if welding is necessary
- **Heat Treatment**: Not typically hardened; not suited for quenching or tempering
- **Case Hardening**: Possible if core strength is not a concern

For applications requiring welding or better impact toughness, **EN1A(L)** or **EN3B** may be more suitable.

ð?§± EN1A Steel Bars from Steelmet Industries

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Steelmet Industries supplies EN1A in multiple profiles and conditions:

- **Bright Bars**: Drawn, Peeled, Ground â?? ideal for precision machining
- **Hot Rolled Bars**: For forgings and general use
- **Shapes**: Rounds, Squares, Flats, Hexagons, Round Corner Squares, Custom Profiles
- **Size Range**:
  - Rounds: 10 mm to 75 mm
  - Flats and Squares: As per requirement
- **Tolerances**: ISO H9, H10 or customer-specified
- **Supply Condition**: Bright drawn, annealed, hot rolled, or custom

We ensure **low decarb**, **consistent chemistry**, and **tight tolerances** for hassle-free machining and high productivity.

ð?• Why Choose Steelmet Industries for EN1A?

â? Decades of experience in free-cutting steels
â? Custom sizes and tolerances

â? Fast dispatch from ready stock
â? Traceable material with Test Certificate
â? Ideal partner for OEMs, exporters, and contract manufacturers
â? Competitive pricing and customer-first service

ð??? Certifications & Compliance

- Supplied with **Material Test Certificate (MTC)**
- Complies with EN 10277, BS 970, IS 14420
- Optional: NABL-certified lab reports, UT/visual inspection, TPI

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ð??? Get a Quote for EN1A Steel

Need EN1A steel bars for machining or mass production?

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

ð??? Website: https://www.steelmet.in
ð??© Fill out the enquiry form to receive a quick quotation from our team.

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