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4140 Alloy Steel Round Bar

Chromium-Molybdenum Heat-Treatable Bar • UNS G41400

4140 round bar is a chromium-molybdenum low-alloy steel specified for mechanical parts that require hardenability, toughness and wear performance after the correct heat treatment. Buying requirements often differ significantly between annealed, normalized and quenched-and-tempered stock.

MATERIAL SPECIFICATIONS

Property / designation	Reference data / purchase requirement
UNS grade	G41400
Alloy family	Chromium-molybdenum steel
Reference steel-bar standard	ASTM A29/A29M as applicable
Carbon (C)	0.38–0.43 wt%
Chromium (Cr)	0.80–1.10 wt%
Molybdenum (Mo)	0.15–0.25 wt%
Manganese (Mn)	0.75–1.00 wt%
Sulfur (S)	0.040 wt% maximum (reference)
Mechanical properties	Must be specified by size, heat treatment and delivery condition

SELECTED APPLICATIONS

Power transmission shafts and couplings • Pins, gears and high-load mechanical parts • Hydraulic and industrial equipment components

GRADE SELECTION & FINISHING

4140 and 41L40 share related base-alloy chemistry but the leaded 41L40 variant is designed for improved machinability and has different processing and application considerations. Do not substitute leaded stock without engineering approval.

State whether the incoming bar is annealed or prehardened and identify any surface-decarburization limits before grinding. Specify straightness and OD tolerances independently.

INFORMATION FOR A QUOTE

Send ASTM/SAE requirement, material condition and hardness range, diameter, length, quantity, grinding removal and test-documentation needs.

Material: material/4140-round-bar-2/

Technical source: AZoM, AISI 4140 Alloy Steel overview

Reference values only; the specified product standard, material condition and mill test report govern.

Not a mill test report or stock availability guarantee. Confirm actual heat, condition and specification.