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420 Stainless Steel Round Bar

Hardenable Chromium Stainless for Wear Applications • UNS S42000

420 stainless steel is a hardenable chromium-based martensitic grade used for wear-resistant components. Grade details, including carbon specification and heat-treatment condition, must be confirmed on the purchase documents, since hardness claims cannot be applied across all 420 variants.

MATERIAL SPECIFICATIONS

Property / designation	Reference data / purchase requirement
Grade and UNS	Type 420 / UNS S42000
Grade family	Hardenable martensitic stainless
Chromium (Cr)	12.0–14.0 wt% (Carpenter 420 reference)
Carbon	Grade- and specification-dependent; verify certified heat chemistry
Sulfur	0.03 wt% maximum (Carpenter 420 type analysis)
Related grade	420F / UNS S42020 is a distinct free-machining variant
Reference bar standard	Check ASTM A276/A314 or specified AMS requirements
Condition-dependent properties	Hardness and strength depend on quench-and-temper schedule
Corrosion limitation	Not interchangeable with high-alloy austenitic stainless
Processing note	Coordinate finish-grinding allowance with heat treating

SELECTED APPLICATIONS

Blades and wear-sensitive precision components • Valve parts and machined assemblies • Pins and mechanical hardware with specified hardness

GRADE SELECTION & FINISHING

420 and free-machining 420F are different compositions and finishing choices; sulfur-bearing modifications generally improve machining at a cost to corrosion resistance and polish quality. Compare 410 where hardening needs are less demanding.

Determine whether hardening happens before finish grinding. Excessive local grinding heat can alter finish properties; evaluate wheel selection, coolants, amount of stock removal and inspection for hardened orders.

INFORMATION FOR A QUOTE

Confirm exact 420 condition, governing bar standard, diameter, final hardness, stock-removal allowance, finish, quantity, straightness and certificates.

Material: material/420-stainless-steel-round-bar/
Technical source: Carpenter Technology, Alloy 420 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.