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430F Stainless Steel

Free-Machining Ferritic Stainless for Turned Parts • UNS S43020

430F stainless steel is a free-machining ferritic chromium grade tailored for turned parts. Its chemical additions and resulting corrosion/finishing behavior are not the same as plain 430. Confirm the exact grade when a customer specifies 430F, 430FR or an ASTM A838 magnetic material.

MATERIAL SPECIFICATIONS

Property / designation	Reference data / purchase requirement
Grade and UNS	430F / UNS S43020
Alloy structure	Free-machining ferritic stainless
Chromium (Cr)	16.0–18.0 wt% (Carpenter grade reference)
Carbon (C)	0.12 wt% maximum (Carpenter grade reference)
Manganese (Mn)	1.25 wt% maximum
Machinability addition	Sulfur modification; verify actual specification limits
Reference bar specs	ASTM A581 / A582 (where applicable)
Related special application	ASTM A838 magnetic alloys require separate review
Heat-treatment response	Not quench-hardenable
Service caution	Not recommended for high-pressure vessels (supplier guidance)

SELECTED APPLICATIONS

Screw-machine shafts, pins and fittings • High-volume ferritic stainless turned components • Specialty hardware where machining is the dominant criterion

GRADE SELECTION & FINISHING

430F is a machinability-oriented grade. Do not replace 430 with 430F, and do not assume 430FR / ASTM A838 magnetic-alloy requirements are equivalent to ordinary 430F based on name alone.

The delivered product form and machining condition matter; provide finished OD, centerless-grinding requirements and inspection parameters. Do not infer magnetic permeability or corrosion acceptance merely from the grade name.

INFORMATION FOR A QUOTE

Specify 430F/UNS S43020, ASTM A581/A582 or other required specification, condition, bar size, finish, quantity and documentation.

Material: material/430f-stainless-steel/

Technical source: Carpenter Technology, Alloy 430F 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.