

Key Features

- Good ductility
- Optimized strength
- Optimized hardness characteristics
- High hardness

Common Applications

- Cutlery
- Knife blades
- Surgical instruments
- Needle valves
- Shear blades
- Scissors
- Hand tools

Material Description

Stainless Steel 420 is a martensitic stainless steel alloy known for its high hardness, strength, and wear resistance. It offers moderate corrosion resistance and is often used in applications requiring excellent strength and durability, such as surgical instruments, cutlery, molds, and industrial blades. Stainless Steel 420 can be heat-treated to achieve even greater hardness and wear resistance, making it suitable for demanding applications where abrasion and wear are major concerns.

Chemical Composition (%)

	C	Cr	Fe	Mn	P	Si	S			
Min.	0.15									
Max.		13	85	1.0	0.040	1.0	0.030			

Mechanical Properties

Ultimate Tensile Strength	24,700 - 264,000 PSI
Tensile Yield Strength	16,700 - 167,500 PSI
Hardness	Rockwell B88
Elongation at Break	9-36%

Physical Properties

Density	0.282 lb/in ³ (7.80 g/cm ³)
Thermal Conductivity	24.9W/m.K
Modulus of elasticity	29,000 KSI (200 GPa)
Melting Point	2,651-2,750°F (1,455-1,510 °C)

Technical Assistance

Our knowledgeable staff, supported by our in-house team of expert metallurgists and engineers, is ready to assist you with any technical inquiries.

InstaVoxel™ - On-Demand Manufacturing Expert

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InstaVoxel's quality control system is ISO-9001 certified, and all our partners hold relevant certifications.



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