



SB Specialty Metals LLC

Your *First Choice* for Specialty Metals

440C – Technical Data

General Descriptions:

440C is a heat treatable stainless steel, designed for a combination of high wear resistance and moderate corrosion resistance.

Examples of applications:

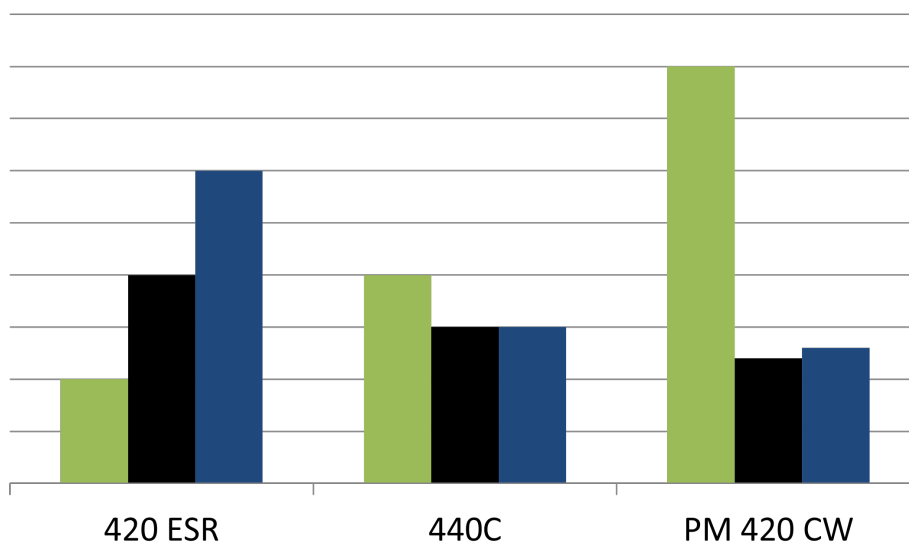
Bearings, industrial knives, specialty cutlery knives, mold inserts, surgical tools.

Chemical Composition

Carbon	Manganese	Molybdenum	Chromium	Silicon
0.95-1.20%	1.00% Max.	0.75% Max.	16.0-18.0%	1.00% Max.

Comparison Chart

■ Wear Resistance ■ Toughness ■ Corrosion Resistance



Typical Heat Treat Response

Tempering Temp Degrees °F	Hardness HRC
As quenched	59
212	59
400	56
600	54
800	55
1000	51

Size Changes During Hardening

Hardening Temp (F)	Tempering Temp	HRC	Longitudinal Size Change %
1875	400	56	+0.07%

Surface Treatment

Nitriding decreases the corrosion resistance of stainless steels, and is not generally recommended for this grade. Because of the limitations of tempering between 800-1100°F, surface treatments for 440C should be limited to those compatible with tempering temperatures under 800°F



440C– Technical Data

Heat Treatment

Annealing

Heat to 1650 °F, hold two hours, cool slowly (25 °F/hour maximum) to 1200 °F, then air cool to room temperature.

Typical annealed hardness is 217-255 BHN.

Stress Relieving

Annealed Material: Heat to 1200-1250 °F, hold two hours, cool in still air. Hardened Material:

Hardened Material: Heat to 25-50 °F below original tempering temperature, hold two hours, cool in still air.

Hardening

Preheat: 1100-1250 °F, equalize, 1400-1450 °F, equalize.

High Heat (Austenitizing)

1850-1900 °F, hold 30-45 minutes at temperature.

Quench

Air, positive pressure vacuum, interrupted oil.

Cool to 150 °F.

Tempering

400-800 °F, hold at temperature for 2 hour per temper, double tempering recommended.

Tempering between 800-1100 °F should be avoided due to a decrease in both toughness and corrosion resistance.

Physical Properties

Modulus of Elasticity	30 psi x 10 ⁶ (207 GPa)	Density	0.278 lb/in ³
Annealed Hardness	217-255 BHN	Machinability	70% of O1