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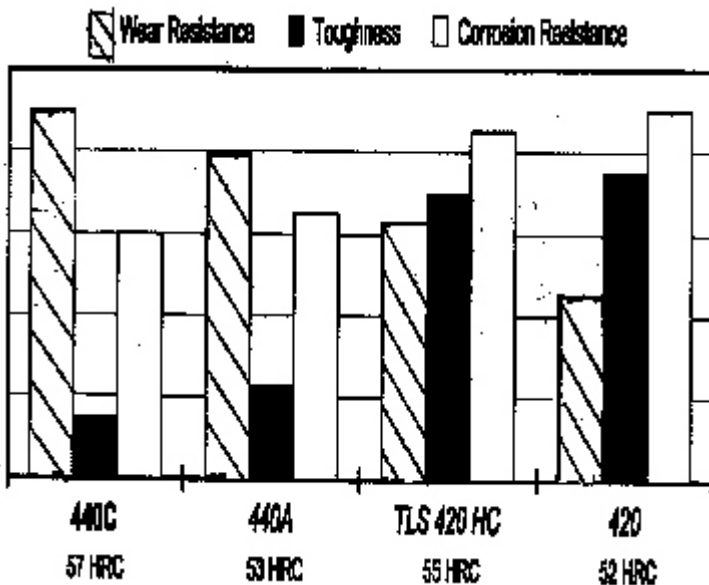
440C Stainless Knife Steel

440C Stainless Knife Steel is a high-carbon martensitic stainless steel which exhibits an attainable hardness of approximately 60 HRC. The high carbon content results in a hard matrix and numerous chromium carbides in the microstructure, which in turn provides excellent wear resistance and retention of cutting edges. 440C stainless knife steel should be considered for applications such as specialty knives, industrial knives, scissors, surgical knives and other applications which require a combination of corrosion resistance, wear resistance or edge retention.

Typical Composition

C	Mn	Si	Cr	Mo
1.05	0.40	0.40	17.0	0.40

Relative Properties



Physical Properties

Density: 0.275 lb/in³ (7620 kg/m³)
 Specific Gravity: 7.62
 Modulus of Elasticity: 29 x 10⁶ psi (200 GPa)
 Thermal Conductivity: 14.0 Btu/ft/hr/°F @ 212°F
 24.2 W/m/°K @ 100°C
 Specific Heat: 0.11 Btu/lb/°F
 Electrical Resistivity: 600 n OHM m @ 68°F (20°C)
 Machinability: 30 - 40% of an AISI B1112

Coefficient of Thermal Expansion

Temperature °F	in/in/°F x 10 ⁻⁶	Temperature °C	mm/mm/°C x 10 ⁻⁶
68 - 392	5.8	20 - 200	10.0
68 - 1112	6.2	20 - 600	11.2

Heat Treating Instructions

Hardening:

Preheating: To minimize distortion in complex tools use a double preheat. Heat at a rate not exceeding 400°F per hour (222°C per hour) to 1000 - 1050°F (538 - 566°C), equalize, then raise to 1400 - 1450°F (760 - 788°C) and equalize. For normal tools, use only the second temperature range as a single preheating treatment.

Austenitizing (High Heat):

Heat rapidly from the preheat to 1850 - 1950°F (101 - 1066°C) and soak for 30 minutes per inch of thickness, 30 minutes minimum.