

AISI 8620 Alloy Steel

AISI 4340 ALLOY STEEL DATASHEET

AISI 8620 alloy steel is a low alloy nickel, chromium, molybdenum case hardening steel, generally supplied in the as rolled condition with a maximum hardness HB 255max. AISI 8620 alloy steel offers high external strength and good internal strength, making it highly wear resistant. AISI 8620 alloy steel has a higher core strength than grades 8615 and 8617. AISI 8620 alloy steel is flexible during hardening treatments, thus enabling improvement of case/core properties. Pre-hardened and tempered (uncarburized) AISI 8620 alloy steel can be further surface hardened by nitriding but will not respond satisfactorily to flame or induction hardening due to its low carbon content.

AISI 8620 alloy steel applications include gears, cranks, shafting, axles, bushings, heavy duty pins, bolting, springs, hand tools, chains, and many other machinery parts.

Product forms include bar, seamless tubing, and plate.



Standards

- UNS G86200

Physical Properties

- Density: 0.284 LB/in³ (7.85 g/cm³)
- Melting Range: 2580-2650°F (1416-1454°C)
- Modulus of Elasticity: 29.7 x10⁶psi (205 Gpa)
- Magnetic Permeability:

Characteristics

- high case toughness and above average core toughness
- the most widely used carburizing alloy steel

Chemical Composition

	C	Mn	S	Si	P	Cr	Mo	Fe
MIN	0.180	0.70	-	0.15	-	0.40	0.15	96.895
MAX	0.230	0.90	0.04	0.35	0.035	0.60	0.25	98.020

Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) %	Hardness (max) HRB (BHN)
76.9 (530)	55.8 (385)	26	60	80 (149)

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SPECIALTY STEEL SUPPLY
19201 CIRCLE LAKE DR
PINEHURST, TX 77362
Call for a quote (281) 821-7111



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