

SB Chipper Knife – Technical Data

General Descriptions:

SB Chipper Knife Steel is an air hardening, 8% chromium grade characterized by very good toughness in combination with good wear resistance.

SB Chipper Knife is readily machinable and also has good grindability.

This grade is normally used in the hardness range of 56-58 HRc.

Examples of applications:

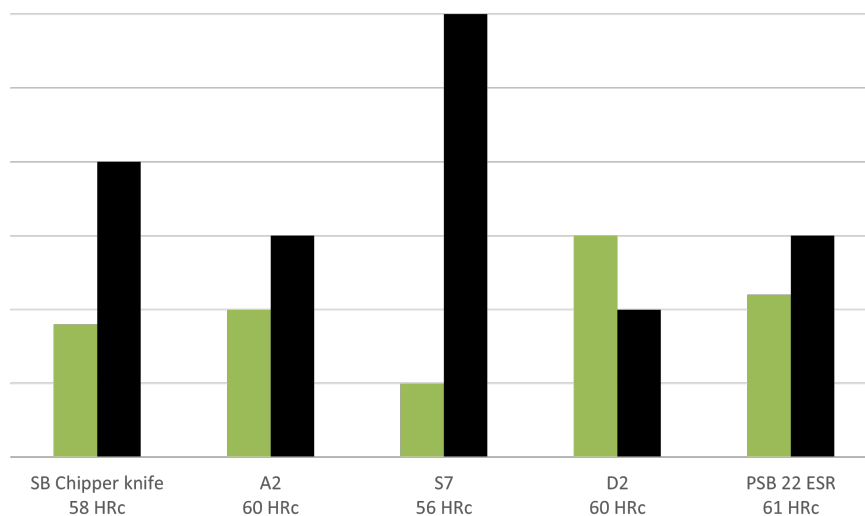
Chipper knife blades, shear blades and trim dies.

Chemical Composition

Carbon	Molybdenum	Vanadium	Chromium	Silicon	Manganese
0.45-0.55%	1.40-1.50%	0.35-0.50%	7.50-8.50%	0.85-1.00%	0.30-0.45%

Comparison Chart

■ Wear Resistance ■ Toughness



Typical Heat Treat Response

Tempering Temp °F	Hardening Temp 1850 °F Hardness HRC
As Quenched	60
400	58
500	57
600	56
700	56.5
800	57
900	58
1000	55

Size Changes During Hardening

Hardening Temp °F	Tempering Temp	HRC	Longitudinal Size Change %
1850	500	57-58	+0.10



SB Chipper Knife – Technical Data

Heat Treatment

Annealing

Heat to 1550 °F, hold two hours. Slow cool 20 °F/ hour to 1200 °F. Then air or furnace cool to room temperature.

Stress Relieving

Performed prior to or after machining to minimize distortion in heat treating. Heat to 1200 °F, hold two hours. Cool slowly to 900 °F, then air cool to room temperature.

Hardening

Protective atmosphere or vacuum furnace equipment preferred.

High Heat (Austenitizing)

1825-1925 °F, hold for 30 minutes at heat. Less holding time is required at the high side of austenitizing range.

Quench

Vacuum or circulating air - quench rate of a minimum of 50 °F per minute down to 900 °F is necessary to achieve desired hardness. Temper immediately following quench..

Tempering

Temper immediately after quench. Double tempering is required, 2 hours per temper, cool to room temperature between tempers.

Physical Properties

Modules of Elasticity	27.5 x 10 ⁶ psi (207 GPa)	Density	0.279 lb/in ³
Annealed Hardness	200-225 BHN	Machinability	75% of O1