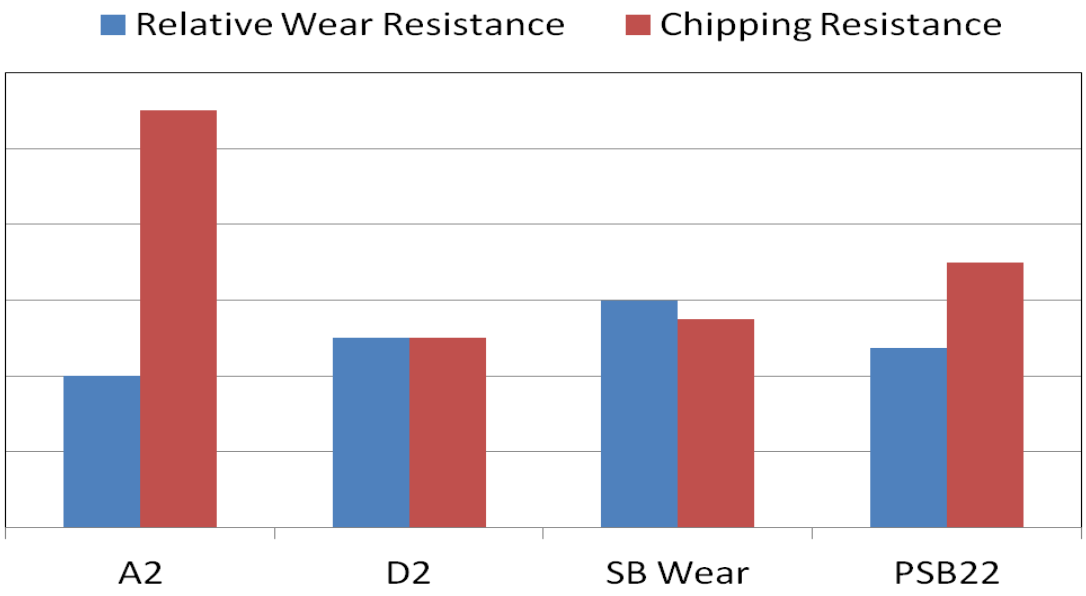
Specialty Metals LLC

Technical Information: PSB 22

PSB 22 is a cold work tool steel produced by the ESR melting practice.
PSB 22 is characterized by an excellent balance of
high wear resistance, and high chipping resistance (toughness).
PSB 22's high tempering temperatures make it a good substrate for most coatings.

Typical Chemical Composition			
Carbon	1.00%	Chromium	8.00%
Molybdenum	2.10%	Silicon	1.00%
Vanadium	0.30%	Manganese	0.40%

SBSM Tool Steel Properties Comparison



Physical Properties

Modulus of Elasticity……30 psi x 10^6 …….(207 GPa)
Density…… …… 0.281 lb/in^3
Annealed Hardness……210-225 Brinell Hardness (BHN)
Machinability……Similar to A2 Tool Steel

1-800-365-1116 www.sbsm.com

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Heat Treatment

Annealing

Heat to 1550^{0}F, hold two hours
Slow cool 20^{o}F/hour to 900^{0}F
Then air or furnace cool to room temperature

Stress Relieving

Performed prior or after machining to minimize distortion in heat treating
1100/1200^{o}F, hold two hours
then air cool to room temperature

Hardening

Salt bath, protective atmosphere, or vacuum furnace equipment preferred.

High Heat (Austenitizing)

1875/1900°F for 30 minutes at heat.

Quench

Salt bath quench to 1000-1100^{o}F, equalize, then air cool to 150°F .
Vacuum or atmosphere quench rate of a minimum 50 degrees F per minute down to 900°F is critical to achieve best heat treat response.
Temper immediately following quench when material reaches 150°F or below.

Tempering

Minimum 400°F tempering temperature required.
Double tempering is required, triple tempering recommended.
Air cool to room temperature between tempers.

Typical Heat Treat Response

Tempering Temp °F	°C	Hardening Temp 1875°F 1024°C	Hardening Temp 1900°F 1038°C
As Quenched		62/63 HRC	63/64 HRC
400	205	61 HRC	61 HRC
500	260	60 HRC	60 HRC
600	315	59 HRC	59 HRC
700	371	60 HRC	60 HRC
800	427	61 HRC	61 HRC
950	510	62 HRC	63 HRC
1000	538	60 HRC	62 HRC
1025	552	58 HRC	60 HRC

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