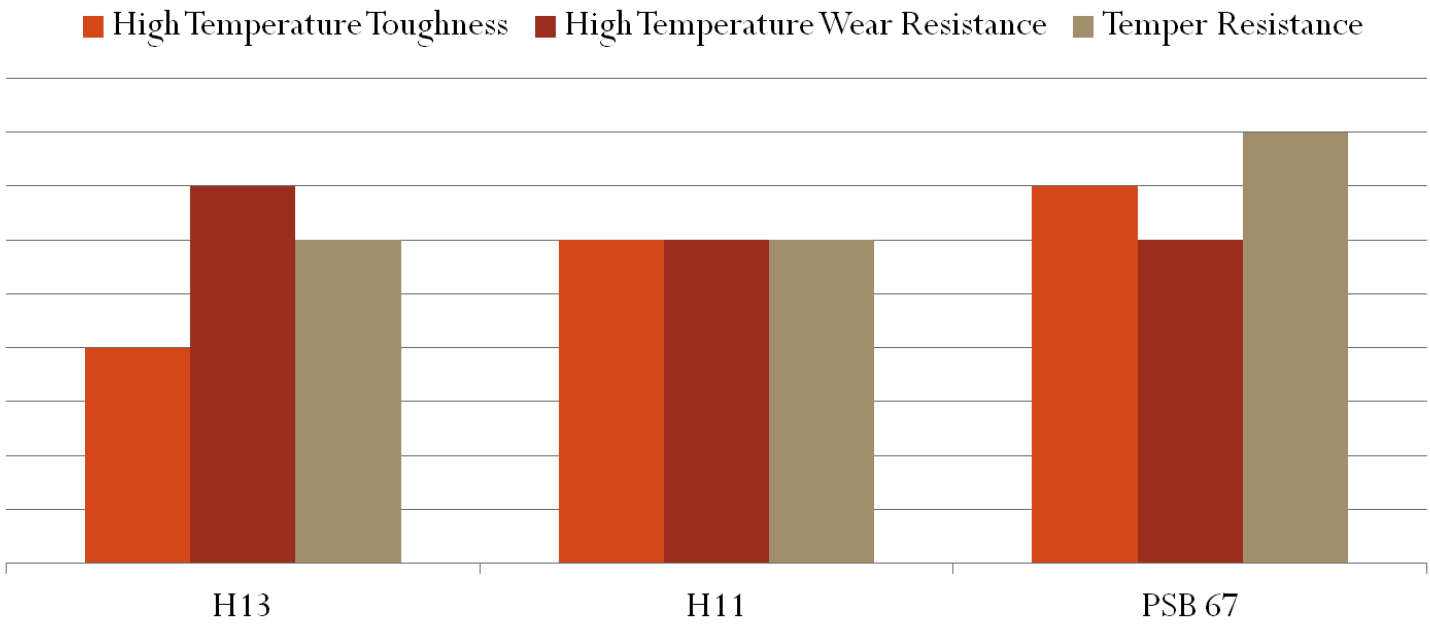
Specialty Metals LLC

Technical Information: PSB 67 ESR (DIN 1.2367 modified)

PSB 67 is a premium hot work tool steel with an optimum combination of hot hardness, hot toughness, and excellent temper resistance.
PSB 67 is used in applications as an upgrade to conventional H13.
PSB 67 is produced using the Electro-Slag Refining (ESR) process.

Typical Chemical Composition			
Carbon	0.38%	Chromium	5.00%
Molybdenum	2.90%	Silicon	0.40%
Vanadium	0.50%	Manganese	0.40%

SBSM Tool Steel Properties Comparison



Physical Properties

Modulus of Elasticity…… ……30 psi x 10^6 ……(207 GPa)
Density…… 0.283 lb/in^3
Annealed Hardness……200-229 Brinell Hardness (BHN)
Machinability……Similar to H13 Tool Steel

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Heat Treatment

Annealing

Heat to 1400°F, hold two hours
Slow cool 20°F/hour to 600°F
Then air or furnace cool to room temperature

Stress Relieving

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

Hardening

Salt bath, protective atmosphere, or vacuum furnace equipment preferred

High Heat (Austenitizing)

1885/1975°F for 30 minutes at heat.

Quench

Salt bath quench to 1000-1100°F, equalize, then air cool to 150°F.
Vacuum or atmosphere quench rate of a minimum 50 degrees F per minute down to 1200F is critical to achieve best heat treat response.
Temper immediately following quench

Tempering

Minimum 1000°F tempering temperature required.
Double tempering is required, triple tempering recommended.
Air cool to room temperature between tempers.

Typical Heat Treat Response

Hardening Temp °F	Hardening Temp °C	Tempering Temp °F	Tempering Temp °C	Hardness HRC
1940	1060	1000	555	55
		1050	570	53
		1100	595	52
		1200	650	43

Thermal Conductivity	Room T	660 F 350 C	1262 F 700 C
W/m*K	30.8	33.5	35.1

Thermal Expansion	Room T-100C	Room T-300C	Room T-500C	Room T-700C
10^{-6} m/m*K	11.9	12.6	13.1	13.5

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