PSB67 – Technical Data

General Descriptions:

PSB67 (DIN 1.2367 modified) is a premium hot work tool steel with an optimum combination of redhardness, hot toughness, and excellent temper resistance.
PSB67 is used in applications as an upgrade to conventional H13.
PSB67 is produced using the Electro-Slag Remelting (ESR) process.

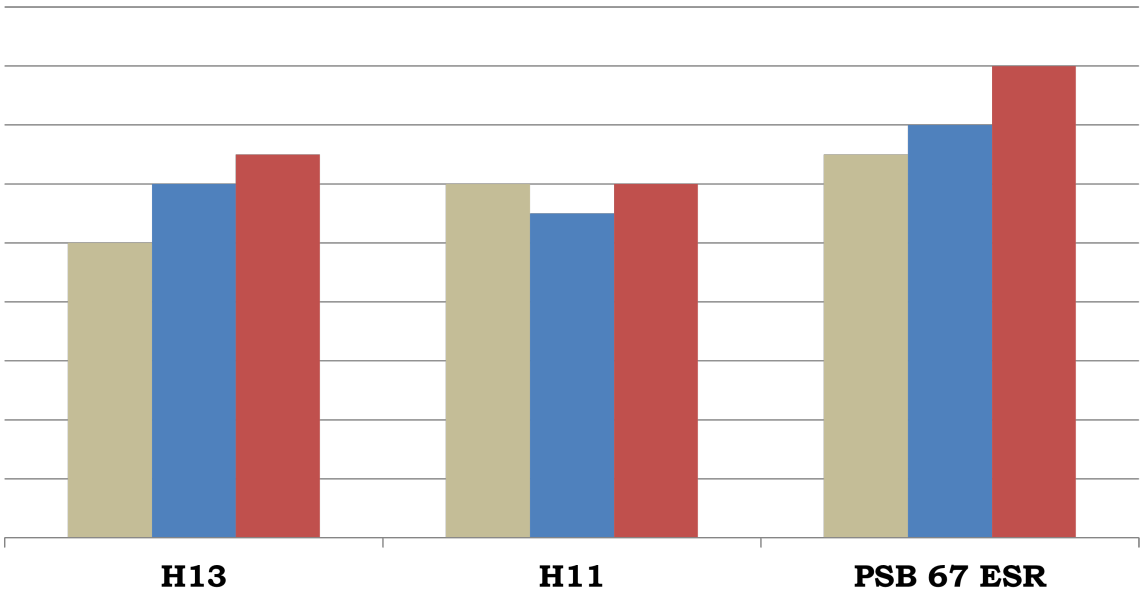
Example of applications:

Forging dies, hot upset dies, extrusion tooling, mandrels, shot sleeves/plungers, plastic molds, core pins, ejector pins.

Chemical Composition

Carbon	Molybdenum	Vanadium	Chromium	Manganese	Silicon
0.36-0.42%	2.70 - 3.10%	0.45 - 0.52%	4.80 - 5.20%	0.30 - 0.42%	0.36 - 0.44%

Comparison Chart



Typical Heat Treat Response

Hardening Temp °F	Tempering Temp °F	Hardness HRC
1940	1000	55
	1050	53
	1100	52
	1200	43

Thermal Conductivity

	212 °F	390°F	580 °F	760°F	930°F	1250°F
W/m*K	29.0	30.4	31.1	31.0	32.4	34.1

Thermal Expansion

	212°F	390°F	580°F	760°F	930°F	1250°F
10^{-6} m/(m.K)	11.5	12.0	12.2	12.5	12.9	13.1

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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

Normally performed after machining to minimize distortion in subsequent 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)

Preheat at 1400-1500 °F - let part equalize. Then austenitize at 1885/1975 °F for a minimum of 30 minutes at austenitizing temperature.

Quench

Salt bath quench to 1000-1100°F, equalize, then air cool to 150°F.
Vacuum or atmosphere quench rate of a minimum 50 °F per minute down to 1200 °F 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.

Physical Properties

Modulus of Elasticity	30 PSI x 10^6 …..(207GPa)	**Density**	0.283 LB/In^3
Annealed Hardness	200-229 BHN	**Machinability**	70% of O1