S-7 Mould Quality Data Sheet

*Chemical Composition (Nominal Values Weight %)

C	P	Si	V	Mn	S	Cr	Mo
0.55	.010	0.35	0.25	0.70	0.005	3.25	1.40

***Composition shown is nominal. Actual chemical composition may vary.**

Characteristics

S-7 MQ is a shock resistant alloy tool steel which provides a unique combination of machinability, exceptional toughness, ease of heat treatment and minimum distortion. Special melting and refining practices are utilized to produce a uniform product with high cleanliness and minimum segregation.

Applications

S-7 MQ is suitable for use in applications requiring high impact strength such as shears, punches, blanking dies and chisels. The grade is also widely used for high-hardness plastic moulds and zinc die-casting dies.

Heat Treating of S-7 Mold Quality

Annealing
S-7 Mould Quality should be heated thoroughly to 1550°F in an atmosphere controlled furnace. Hold 2 hours, furnace cool at 25°F per/hr to 1100°F, then air cool to room temperature. A maximum hardness of 210 BHN should result.

Hardening
Preheat: 1200-1250°F, equalize temperature, hold 2 hours.
Austenitize: 1725-1750°F, equalize temperature, hold 30 minutes.
Quench: Positive pressure (2 bar minimum) quench to below 125°F.
Temper: Double temper at 400-800°F, equalize temperature, hold 2 hours minimum. Double temper recommended.
Typical hardness: 48-57 HRC.

Stress Relieving
Annealed material: Heat to 1000-1200°F, hold 2 hours, then air cool.
Hardened material: Heat to 25-50°F below heat treat tempering temperature, hold 2 hours, then air cool.

EDM
Hardened material: Heat to 25-50°F below heat treat tempering temperature, hold 2 hours, then air cool.

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