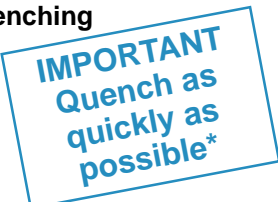


COMPAX™ SUPREME

Mold Quality Tool Steel (AISI S-7)

Heat Treatment Recommendations

	Vacuum	Salt Bath/Fluidized Bed	Atmosphere Furnace Muffle Furnace/Packed
Preheating Temperature	Bring up to 1200°F, equalize	1. 800-900°F, equalize 2. 1100-1200°F, equalize Step 1 only for big blocks (cross section above 6")	Bring up to 1200°F, equalize
Hardening Temperature Austenitizing	1690-1780°F (Normally 1725°F) Holding time after the tool or part has fully heated through at the hardening temperature: minimum 30 minutes, maximum 1 hour. Alternatively hold 20 minutes for first 1" and then 15 minutes for each additional inch of wall thickness.		
Quenching 	Alt. 1 Inert gas, positive pressure Alt. 2 Back-filled pressurized gas to 750-850°F, then equalize center and surface. (Maximum holding time 30 minutes) Continue forced cooling to 150°F.	Alt. 1 Quench in salt 950-1050°F. Alt. 2 Quench in oil 150°F until the die is black. (Cross sections over 2-1/2 inches) Alt. 3 Forced air circulation.	Alt. 1 Oil 150°F until the die is black, then air cooling (Cross sections over 2-1/2 inches) Alt. 2 Forced circulation of air or inert gas.
Tempering (minimum two times) Temper immediately after quenching when the tool or part reaches 150°F	Temperature 450°F 480°F 1020°F Time: 1 hour per inch of wall thickness, or hold at temperature a minimum of 2 hours.	Hardness 56-58 HRC 54-56 HRC 50-52 HRC	
Average size change as a result of hardening and tempering should not exceed 0.3% overall (0.0015 inches per inch side) if the tool has been stress relieved before finish machining.			

* Cooling rate must be adequate to avoid any transformation, with decreased properties as a result. However, also consider the risk of excessive distortion from very fast cooling. A minimum quench rate of 100-120°F/minute as measured at a depth of ~ 5/8" is recommended for optimal tool properties.

COMPAX SUPREME - Premium mold quality tool steel

- Clean homogeneous structure - excellent polishability
- Low sulfur content - better toughness
- Tight chemical composition - predictable heat treatment response

This information is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should not therefore be construed as a warranty of specific properties of the products described or a warranty for fitness for a particular purpose.



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