

# BOHLER K340 ISODUR®

## High-Performance Cold Work Tool Steel

### Chemical Composition (average %)

C	Si	Mn	Cr	Mo	V	Al, Nb
1.10	0.90	0.40	8.30	2.10	0.50	Additions

### Heat Treatment Procedure

**Preheat Temperature:**

Initial preheat: heat through to 1200°F  
Second preheat: heat through to 1550°F

**Hardening Temperature:**

1905 - 1975°F, typically 1940°F  
Soak time after core of tool has reached the hardening temperature:  
30 minutes.

**Quenching:**

Vacuum	Salt Bath/Fluidized	Oil
Utilizing inert gas at positive pressure, quench as rapidly as possible to 1100°F and equalize the core and surface temperature. Continue rapid cooling to 700°F and equalize. Finish cooling to 150°F.	Quench to 1100°F, equalize. Continue quenching to 700°F followed by cooling in circulating air to 150°F.	Quench in warm oil. Limit to small, uncomplicated tooling.  Note: There is an increased risk for cracking and/or excessive distortion.

**Tempering Temperature:**

Immediately perform tempering operation once tool has reached 150°F.

Expected hardness (hardening temperature 1940°F):

Temperature (°F)	Hardness (+/- 2 HRC)
1020	62
1040	60
1060	58
1080	56

Holding Time: 1 hour per inch of thickness or maintain at temperature for a minimum of 2 hours.

Recommend a minimum of two tempers with intermittent cooling to room temperature.

Note: Leave adequate machine stock prior to heat treatment to allow for any dimensional changes or distortion which may occur. For reference, the size change should not exceed .0025 inches per inch per side if stress relieving has been performed after rough machining.

**Stress Relieving:**

Heat through to 1200°F, hold for 2 hours. Cool slowly to 930°F, continue cooling in air. This procedure is intended to reduce the residual stress levels created by rough machining.

