

# COLD WORK TOOL STEELS

## Application Segments

Cold Work

## Available Product Variants

Long Products\*

Plates

\* Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

## Product Description

BÖHLER K320 corresponds to the material 1.2355 (50CrMoV13 -15, S7). According to the AISI classification system, this tool steel belongs to the group of impact-resistant tool steels (S types). This popular tool steel offers high toughness and good machinability with moderate wear resistance. BÖHLER K320 is used in cold and hot work applications as well as in plastic mold making. This tool steel is used for a wide range of tools where impact strength, good machinability and simple heat treatment are important.

## Process Melting

Airmelted

## Properties

- > Toughness & Ductility : good
- > Wear Resistance : good
- > Compressive strength : good
- > Dimensional stability : good

## Applications

- > Machine knife (for producers)
- > Fine Blanking, Stamping, Blanking
- > Rolling
- > Powder Pressing
- > Cold Forming
- > Tool Holders (milling, drilling, turning & chucks)

## Technical data

Material designation	
~1.2357	SEL
~50CrMoV13-14	EN
S7	AISI

## Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V
0.53	0.30	0.60	3.25	1.45	0.25

## Material characteristics

	Compressive strength	Dimensional stability during heat treatment	Toughness	Wear resistance abrasive
BÖHLER K320	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
BÖHLER K305	★ ★ ★ ★ ★	★ ★ ★	★ ★	★ ★ ★ ★ ★
BÖHLER K306	★ ★ ★ ★	★ ★ ★	★ ★ ★ ★	★ ★ ★
BÖHLER K313	★ ★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
BÖHLER K329	★ ★ ★	★ ★ ★	★ ★ ★ ★	★ ★ ★ ★
BÖHLER K600	★	★ ★ ★	★ ★ ★ ★ ★	★
BÖHLER K601	★	★ ★ ★	★ ★ ★ ★	★ ★
BÖHLER K605	★ ★	★ ★ ★	★ ★ ★ ★	★

## Delivery condition

Annealed	
Hardness (HB)	max. 225

## Heat treatment

Annealing		
Temperature	820 to 850 °C	Slow controlled cooling in furnace at a rate of 10 to 20 °C/hr (18 to 36 °F/hr) down to approximately 600 °C (1112 °F)    Further cooling in air.
Stress relieving		
Temperature	600 to 650 °C	After through heating, hold in neutral atmosphere for 1-2 hours.    Slow cooling in furnace    Intended to relieve stresses caused by extensive machining or in complex shapes.
Hardening and Tempering		
Temperature	930 to 950 °C	Quenching: Oil, air.    Holding time after temperature equalization: 15 to 30 minutes.

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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