BÖHLER

BÖHLER K360 ISODUR®

COLD WORK STEELS

Available Product Variants

Long Products* | Plates

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

Product Description

BÖHLER K360 ISODUR belongs to the group of 8% chromium steels. This tool steel is produced using the electro-slag remelting (ESR) process developed by BÖHLER. This re-melting technology ensures the lowest micro and macro segregation as well as excellent purity and uniformity of the material. The alloy composition with higher molybdenum and vanadium content makes BÖHLER K360 ISODUR even more wear resistant than BÖHLER K340 ISODUR. Compared to tool steels like 1.2379 (D2), this combination of better toughness and wear resistance offers significant advantages for punching and cutting tools.

Process Melting

Airmelted + Remelted

Properties

- Toughness & Ductility : good
- Wear Resistance : high
- Compressive strength : good
- Dimensional stability : good
- Grindability : very high

Applications

- Machine knife (for producers)
- Coining
- Screws and Barrels
- General Components for Mechanical Engineering
- Components for Recycling Industry
- Rolling
- Fine Blanking, Stamping, Blanking
- Wear parts
- Rolls
- Pill punching dies
- Cold Forming
- Powder Pressing
- Thread rolling
- Comps. for Equip. Below Ground (Boring, Shafts, etc.)

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V	Al	Nb
1.25	0.90	0.35	8.75	2.70	1.18	+	+

Material characteristics

	Compressive strength	Dimensional stability during heat treatment	Toughness	Wear resistance abrasive	Wear resistance adhesive
BÖHLER K360 ISODUR®	★★★	★★★★	★★★	★★★★	★★★★
BÖHLER K100	★★	★★	★	★★★	★★
BÖHLER K105	★★	★★	★	★★	★★
BÖHLER K107	★★	★★	★	★★★	★★
BÖHLER K110	★★	★★★	★	★★★	★★
BÖHLER K190 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K294 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K340 ECOSTAR®	★★★	★★★	★★	★★	★★
BÖHLER K340 ISODUR®	★★★	★★★★	★★★	★★★	★★★★
BÖHLER K346	★★★	★★★	★★★	★★★★	★★
BÖHLER K353	★★	★★★	★★	★★	★★
BÖHLER K390 MICROCLEAN®	★★★★★	★★★★★	★★★★	★★★★★	★★★★★
BÖHLER K490 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K497 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K888 MATRIX	★★★★	★★★★★	★★★★★	★★	★★
BÖHLER K890 MICROCLEAN®	★★★★	★★★★★	★★★★★	★★★	★★★

Delivery condition

Annealed

Hardness (HB)	max. 250

Heat treatment

Annealing

Temperature	800 to 850 °C | 1,472 to 1,562 °F	Slow, controlled cooling in furnace at a rate of 10 to 20 °C/hr down to approx. 600 °C, further cooling in air.

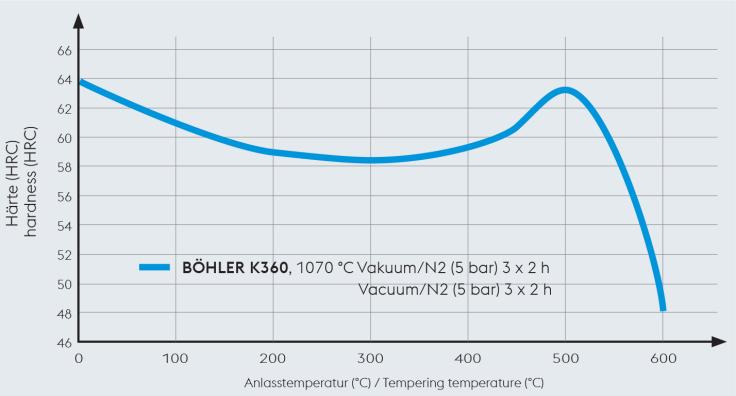
Stress relieving

Temperature	560 to 650 °C | 1,040 to 1,202 °F	Slow cooling in furnace to relieve stresses due to extensive machining or in complex shapes. After through-heating, hold in neutral atmosphere for 1 - 2 hours.

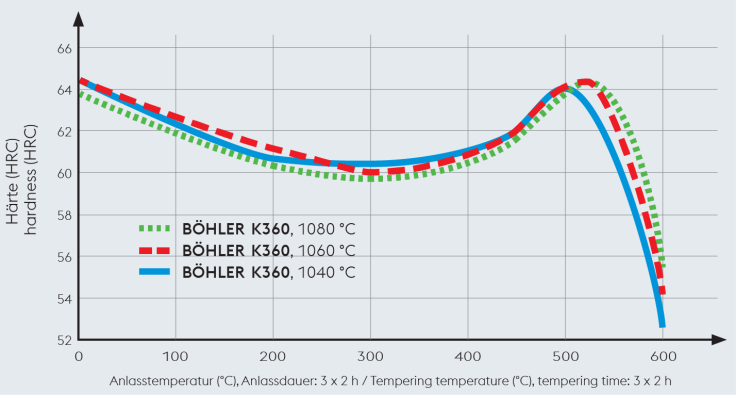
Hardening and Tempering

Temperature	1,040 to 1,080 °C | 1,904 to 1,976 °F	Oil, salt bath, compressed air, air After through-heating, hold for 15 to 30 minutes. After hardening, tempering to the desired working hardness, see tempering chart.

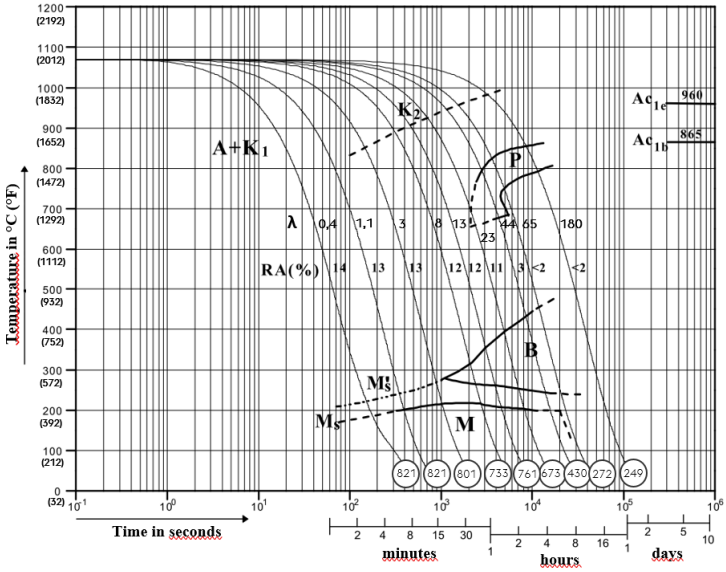
Tempering chart - Tempering curve in the vacuum furnace



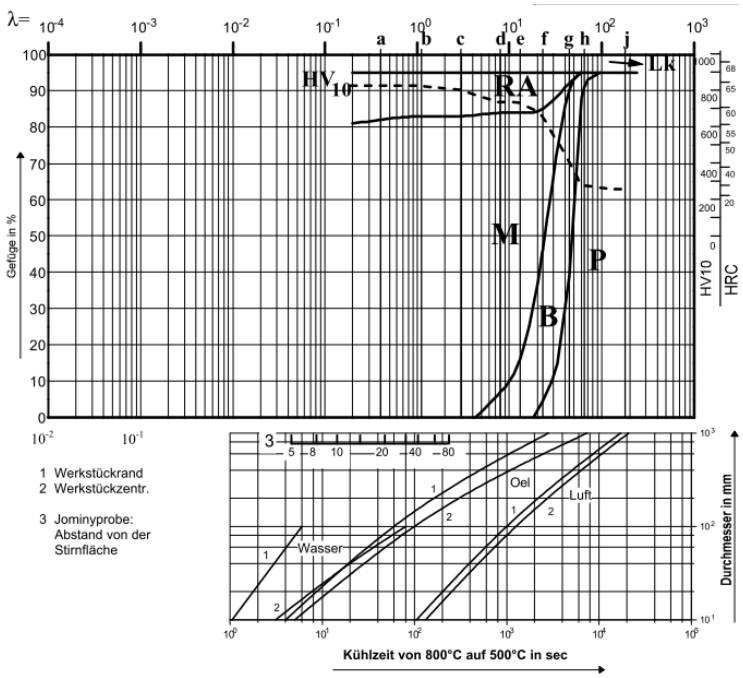
Tempering chart - Comparison of different austenitising temperatures (salt-bath / oil)



Continuous cooling CCT curves



Quantitative phase diagram



Physical Properties

Temperature (°C | °F)	20 | 68
Density (kg/dm^3 | lb/in^3)	7.7 | 0.28
Thermal conductivity (W/(m.K) | BTU/ft h °F)	16.3 | 9.42
Specific heat (kJ/kg K | BTU/lb °F)	0.46 | 0.1099
Spec. electrical resistance (Ohm.mm^2/m | 10^{-4} Ohm.inch^2/ft)	0.64 | 3.02
Modulus of elasticity (10^{3}N/mm^2 | 10^{3}ksi)	212 | 30.75

Thermal Expansions between 20°C | 68°F and ...

Temperature (°C | °F)	100 | 212	200 | 392	300 | 572	400 | 752	500 | 932
Thermal expansion (10^{-6} m/(m.K) | 10^{-6} inch/inch.°F)	11.2 | 6.2	11.5 | 6.4	11.8 | 6.6	12.3 | 6.8	12.7 | 7.1

Long Products: For additional specification and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

Sheet & Plates: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

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ONE STEP AHEAD.