BÖHLER

BÖHLER K360 ISODUR®

OCELE PRE PRÁCU ZA STUDENA

Dostupné výrobné profily

Tyčové polotovary* | Plechy

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

Popis produktu

BÖHLER K360 ISODUR je ďalší vývojový stupeň 8 %-chrómových ocelí, je preto lepšie prispôsobená potrebám našich zákazníkov. Mimoriadne vysoká odolnosť voči opotrebeniu, v spojení s dobrou odolnosťou proti tlakovému namáhaniu robia túto oceľ pravým riešiteľom problémov.

Spôsob výroby

Konvenčná výroba + Pretavovanie

Vlastnosti

- Húževnatosť a odolnosť proti plastickej deformácii : dobré
- Odolnosť proti opotrebovaniu : vysoká
- Pevnosť v tlaku : dobré
- Rozmerová stabilita : dobré
- Brúsiteľnosť : veľmi vysoká

Aplikácia

- Strojové nože (pre výrobcov)
- Razenie
- Závitovky
- Diely pre všeobecné strojárstvo
- Komponenty pre recykláciu
- Valcovanie
- Strihanie / Dierovanie / Lisovanie / Presné strihanie
- Oteruvzdorné diely
- Valcovanie profilov
- Matrice na výrobu tabliet
- Tvárnenie za studena
- Lisovanie práškov
- Thread rolling (SK)
- Komponenty pre ťažobný priemysel (hriadele, komponenty pre vŕtanie)

Chemické zloženie

C	Si	Mn	Cr	Mo	V	Al	Nb
1,25	0,90	0,35	8,75	2,70	1,18	+	+

Porovnanie vlastnosti materiálu

	Odolnosť proti tlakovému zaťaženiu	Rozmerová stabilita počas tepelného spracovania	Húževnatosť	Odolnosť proti abrazívnemu opotrebovaniu	Odolnosť proti adhezívnemu opotrebovaniu
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®	★★★★	★★★★★	★★★★★	★★★	★★★

Stav pri dodaní

Žíhaný

Tvrdosť (HB)	max. 250

Tepelné spracovanie

Žíhanie

Teplota	800 až 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.

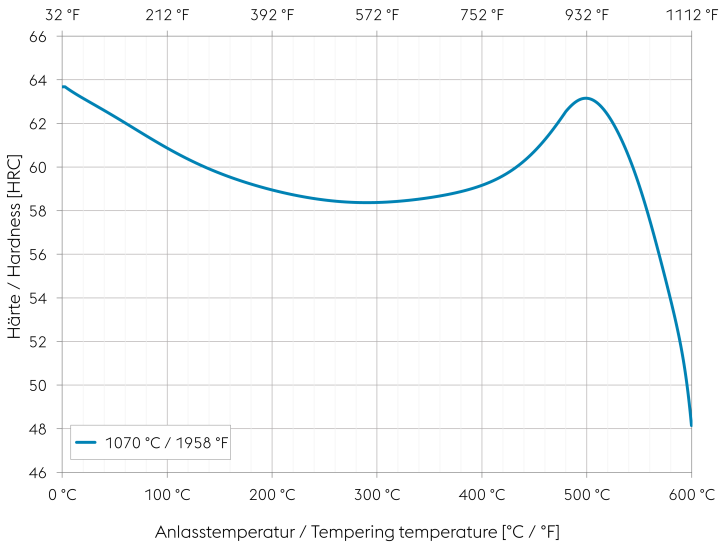
Žíhanie na odstránenie pnutí

Teplota	560 až 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.

Kalenie a popúšťanie

Teplota	1 040 až 1 080 °C	Quenching: Oil, salt bath, gas, compressed or still air. || Holding time after temperature equalization: 15 to 30 minutes. || After hardening, tempering to the desired working hardness according to the tempering chart.

Tempering chart - Tempering curve in the vacuum furnace



Specimen size: square 20 mm (0,787 inch)

Slow heating to tempering temperature immediately after hardening.

Time in furnace 1 hour for each 20 mm (0,787 inch) of workpiece thickness but at least 2 hours.

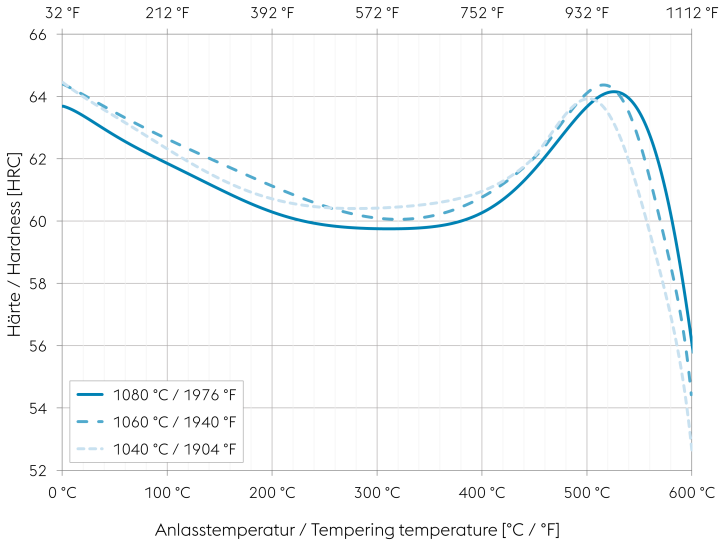
Please refer to the tempering chart for guide values for the achievable hardness after tempering.

It is recommended to temper at least three times above the secondary hardness maximum.

Cooling in air to room temperature after each tempering step is recommended.

Tempering for stress relieving 30 to 50 °C (86 to 122 °F) below the highest tempering temperature.

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



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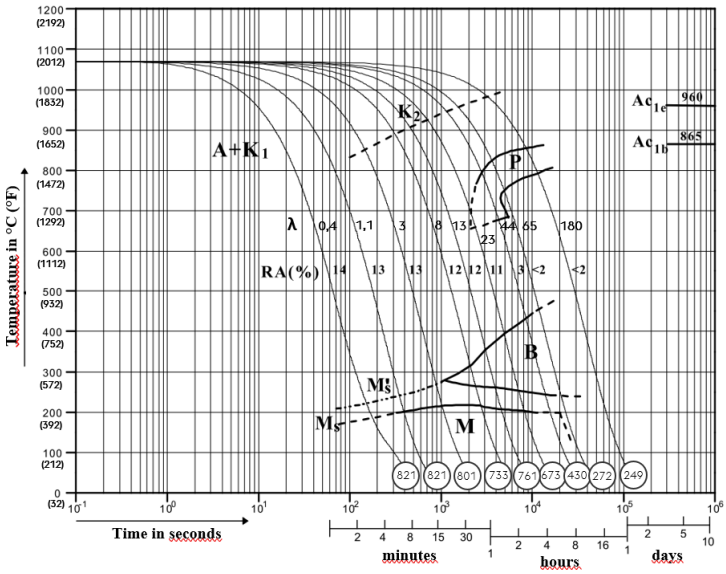
Continuous cooling CCT curves



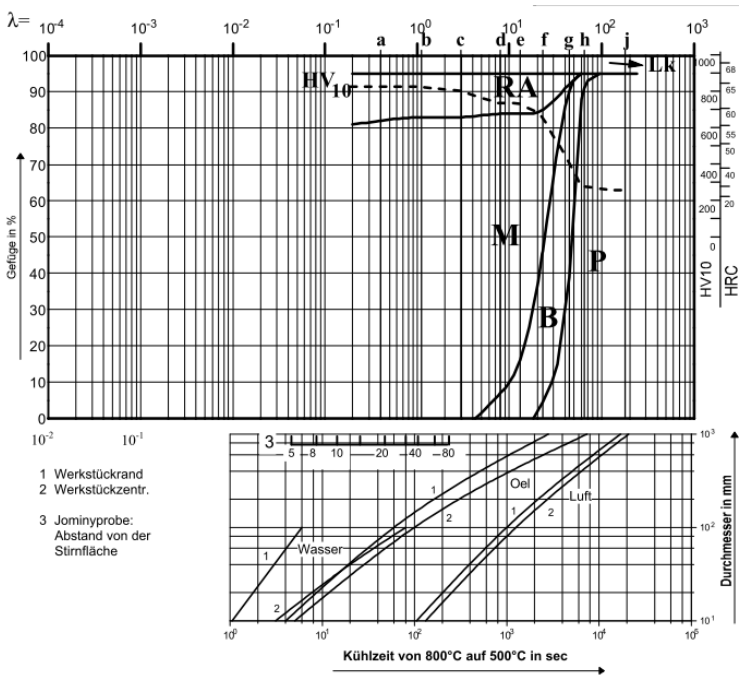
Austenitising temperature: 1070 °C (1958 °F)
Holding time: 30 minutes

O Vickers hardness

0.4...59.8 cooling parameter λ, i.e. duration of cooling from 800 to 500 °C (1472 to 932 °F) in s x 10^{-2}

A... Austenite
K... Carbide
P... Perlite
B...Bainite
M... Martensite
Ms... Martensite starting temperature

Quantitative phase diagram



HV10... Vickers Hardness
Lk... Ledeburite carbide
RA... Residual austenite
M... Martensite
B... Bainite
P... Perlite

1... Edge or face
2... Core
3... Jominy test: distance from the quenched end

Fyzikálne vlastnosti

Teplota (°C)	20
Hustota (kg/dm^3)	7,7
Tepelná vodivosť (W/(m.K))	16,3
Merná tepelná kapacita (kJ/kg K)	0,46
Merný elektrický odpor (Ohm.mm^2/m)	0,64
Modul pružnosti (10^{3}N/mm^2)	212

Tepelná rozťažnosť

Teplota (°C)	100	200	300	400	500
Tepelná rozťažnosť (10^{-6} m/(m.K))	11,2	11,5	11,8	12,3	12,7

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.

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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ONE STEP AHEAD.