BÖHLER

BÖHLER S200

RYCHLOŘEZNÉ OCELI

Rozměrový sortiment k dispozici

Tyčová ocel*	Plech

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

Popis produktu

BÖHLER S200 – „Léty ověřená kvalita“

Tato tradiční wolframová rychlořezná ocel prokazuje dnes stejně jako dříve svoji prvotřídní kvalitu.
Tato jakost oceli se vyznačuje dobrou tvrdostí za tepla a dobrou odolností proti opotřebení otěrem.

Trasa tavení

Airmelted

Vlastnosti

- Houževnatost a tažnost : dobré
- Odolnost proti opotřebení : vysoká
- Pevnost v tlaku : dobré
- Stabilita hran : dobré
- Brousitelnost : dobré
- Tvrdost za tepla (červená tvrdost) : vysoká

Použití

- Zvláštní řezné nástroje
- Odvalovací frézy a nástroje pro obrážečky
- Vrtáky a závitníky
- Cutting-typical instruments and knives
- Průmyslové nože
- End Mills
- Thread rolling (CZ)

Technické údaje

Označení materiálu	
1.3355	SEL
T12001	UNS
HS18-0-1	EN
T1	AISI

Normy	
4957	EN ISO
A600	ASTM

Chemické složení

C	Si	Mn	Cr	V	W
0,75	0,25	0,30	4,10	1,10	18,00

Materiálové vlastnosti

	Tlaková zatížitelnost	Rozm?lnitelnost	Tvrdost za tepla	Houževnatost	Odolnost proti opotřebení	Udrení ost?í
BÖHLER S200	★★★	★★	★★★	★★	★★★	★★
BÖHLER S400	★★★	★★★	★★★	★★★	★★	★★
BÖHLER S401	★★	★★★	★★	★★★	★★	★★★
BÖHLER S404	★★	★★★	★★	★★★	★★	★★
BÖHLER S405	★★★	★★★	★★	★★★	★★	★★
BÖHLER S500	★★★★	★★★	★★★★	★★	★★★	★★★
BÖHLER S600	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S607	★★★	★★★	★★★	★★	★★★	★★★
BÖHLER S630	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S705	★★★	★★★	★★★★	★★	★★	★★★★
BÖHLER S730	★★★	★★★	★★★★	★★	★★	★★★★

Stav dodání

Žíháno

Tvrdost (HB)	max. 280
Pevnost v tahu (N/mm²)	max. 980

Tepelné zpracování

Annealing

Teplota	770 na 840 °C	Controlled slow cooling in furnace (10 to 20°C/h / (50 to 68°F/h) to approx. 600°C (1112°F), air cooling.

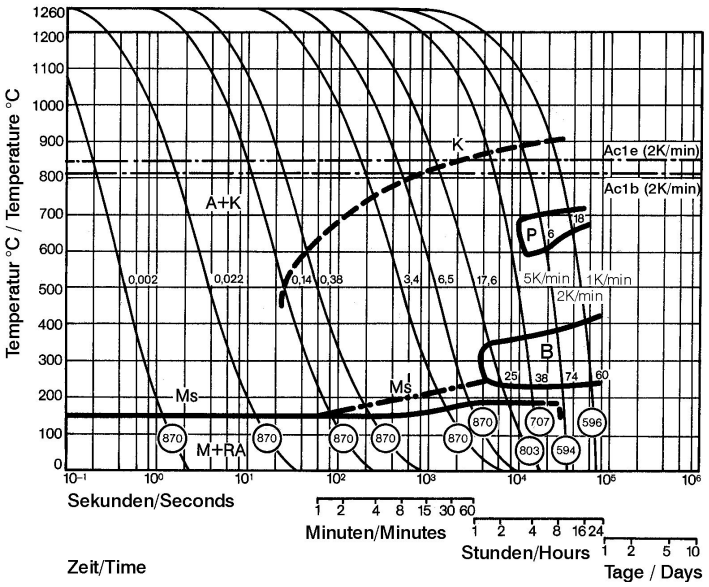
Žíhání na odstranění vnitřního pnutí

Teplota	600 na 650 °C	Slow cooling in furnace. To relieve stresses set up by extensive machining or in tools of intricate shape. After through heating, hold in neutral atmosphere for 1 to 2 hours.

Kalení a popouštění

Teplota	1 250 na 1 290 °C	Salt bath, vacuum Preheating: 1st stage ~ 500 °C (930 °F), 2nd stage ~ 850 °C (1560 °F), 3rd stage ~1050 °C (1920 °F) Austenitising: 1250 - 1290 °C (2280 - 2350 °F), holding time after complete heating 80 seconds, maximum 150 seconds, to avoid material damage due to overheating. Quenching: oil, warm bath (500 - 550 °C (930 - 1020 °F)), vacuum (nitrogen)
Teplota	550 na 580 °C	Slow heating to tempering temperature immediately after austenitising. Dwell time in the furnace 1 hour per 20 mm material thickness (at least 1 hour) Slow cooling to room temperature 3 tempering cycles recommended Hardness see tempering chart

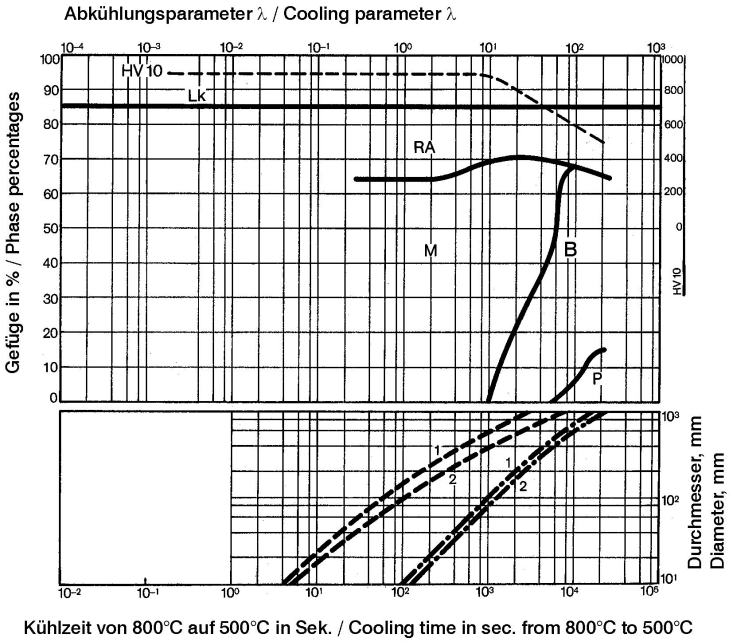
Continuous cooling CCT curves



Austenitising temperature: 1260°C (2300°F)
Holding time: 150 seconds

○...Vickers hardness
6 . . . 18 phase percentages
0.002 . . .17.6 cooling parameter, i.e. duration of cooling from 800-500°C (1472-932°F) in s x 10^{-2}
5 K/min ....1 K/min cooling rate in K/min in the 800 - 500°C (1472 - 932°F) range
Ms-Ms'....range of grain boundary martensite formation

Quantitative phase diagram



A . . Austenite

B . . Bainite

K . . Carbide

M . . Martensite

P. . . Perlite

Lk . . Ledeburite carbide

RA . Retained austenite

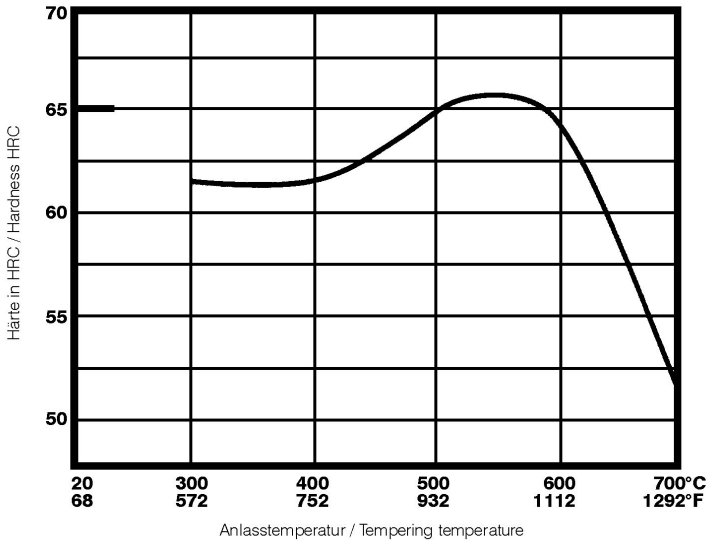
- - - - Oil cooling

-- • -- Air cooling

1. . . Edge or face

2. . . Core

Tempering Chart



Hardening temperature: 1260°C (2300°F)

Specimen size: square 20 mm

Fyzikální vlastnosti

Teplota (°C)	**20**
Hustota (kg/dm^3)	8,7
Tepelná vodivost (W/(m.K))	19
Měrná tepelná kapacita (kJ/kg K)	0,46
Měrný elektrický odpor (Ohm.mm^2/m)	0,5
Modul pružnosti (10^{3}N/mm^2)	217

Tepelná roztažnost

Teplota (°C)	100	200	300	400	500	600	700
Tepelná roztažnost (10^{-6} m/(m.K))	10	10,5	10,8	11,2	11,3	11,4	11,6

Long Products: For additional specifications 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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voestalpine
ONE STEP AHEAD.