

YÜKSEK HIZ ÇELİKLERİ

Mevcut Ürün Şekilleri

Uzun Ürünler*

Levhalar

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

Ürün Tanımı

BÖHLER S500 – "The fireproof one"

In the family of conventional high-speed steels, this alloy combines excellent cutting properties with very high hot hardness.

Erime rotası

Airmelted

Özellikler

- > Tokluk ve Süneklik : iyi
- > Aşınma Direnci : yüksek
- > Basınç Dayanımı : çok yüksek
- > Kenar Stabillitesi : yüksek
- > Öğütülebilirlik : iyi
- > Sıcak Sertlik (kırmızı sertlik) : çok yüksek

Uygulamalar

- > Blades for Sawing Machines
- > End Mills
- > Twist Drills and Taps
- > Broaches and Reamers
- > Gear Cutting, Shaving and Shaping Tools
- > Thread rolling (TR)
- > Cold Forming / Coining
- > Special Cutting Tools

Teknik veriler

Malzeme Tanımı		Standartlar	
1.3247	SEL	4957	EN ISO
HS2-9-1-8	EN		

Kimyasal Bileşim

C	Si	Mn	Cr	Mo	V	W	Co
1,1	0,5	0,2	3,9	9,2	1,1	1,5	7,8

Malzeme özellikleri

	Basınç Dayanımı	Öğütülebilirlik	Sıcak sertlik	Sertlik	Aşınma direnci	Kesilme direnci
BÖHLER S500	★★★★	★★★	★★★★	★★	★★★	★★★
BÖHLER S200	★★★	★★	★★★★	★★	★★★	★★
BÖHLER S400	★★★	★★★	★★★★	★★★	★★	★★
BÖHLER S401	★★	★★★	★★	★★★	★★	★★★
BÖHLER S404	★★	★★★	★★	★★★	★★	★★
BÖHLER S430	★★	★★★	★★	★★★	★★	★★
BÖHLER S600	★★★	★★★	★★★★	★★	★★	★★★
BÖHLER S607	★★★	★★★	★★★★	★★	★★★	★★★
BÖHLER S630	★★★	★★★	★★★★	★★	★★	★★★
BÖHLER S705	★★★	★★★	★★★★★	★★	★★	★★★★★
BÖHLER S730	★★★	★★★	★★★★★	★★	★★	★★★★★

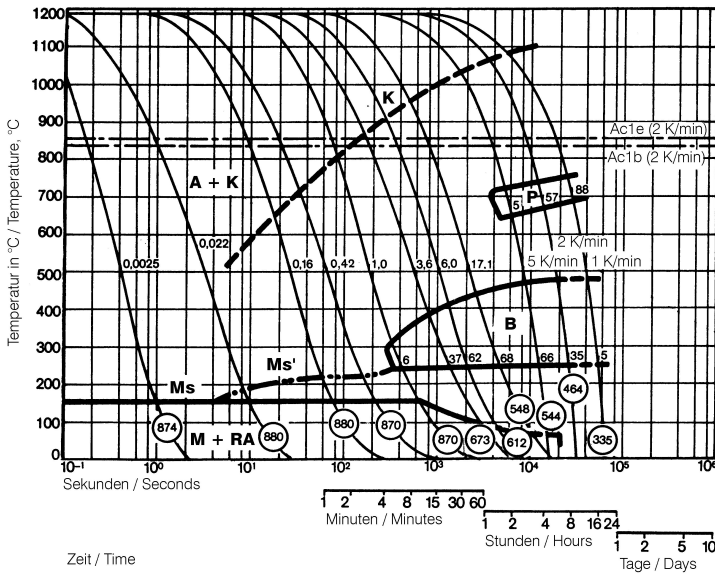
Teslimat durumu

Annealed	
Sertlik (HB)	maks. 280 Drawn max 300 HB
Çekme mukavemeti (N/mm ²)	maks. 6.964
Akma dayanımı (MPa)	min. 3

Isıl işlem

Annealing		
Sıcaklık	770 kadar 840 °C	Controlled slow cooling in furnace (10 to 20°C / h) to approx. 600°C (1110°F), air cooling.
Stress relieving		
Sıcaklık	600 kadar 650 °C	Slow cooling 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.
Sertleştirme ve Temperleme		
Sıcaklık	1.130 kadar 1.180 °C	Salt bath, vacuum Preheating: 1st stage ~ 500 °C, 2nd stage ~ 850 °C, 3rd stage ~1050 °C Austenitising: 1130 - 1180 °C, holding time after complete heating 80 seconds, maximum 150 seconds, to avoid material damage due to overheating. Quenching: oil, warm bath (500 - 550 °C), gas
Sıcaklık	550 kadar 570 °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

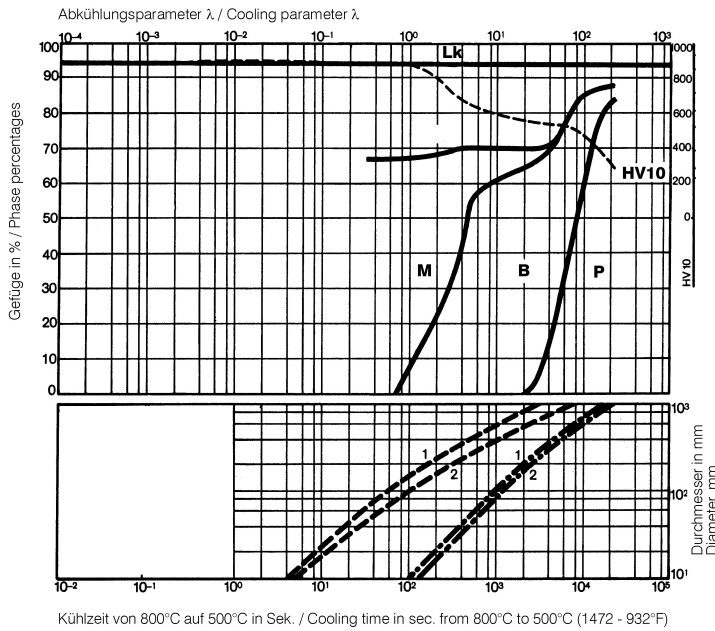
Continuous cooling CCT curves



Austenitising temperature: 1180°C (2156°F)
Holding time: 180 seconds

- A....Austenite
- B....Bainite
- K....Carbide
- P....Pearlite
- M....Martensite
- RA...Retained Austenite

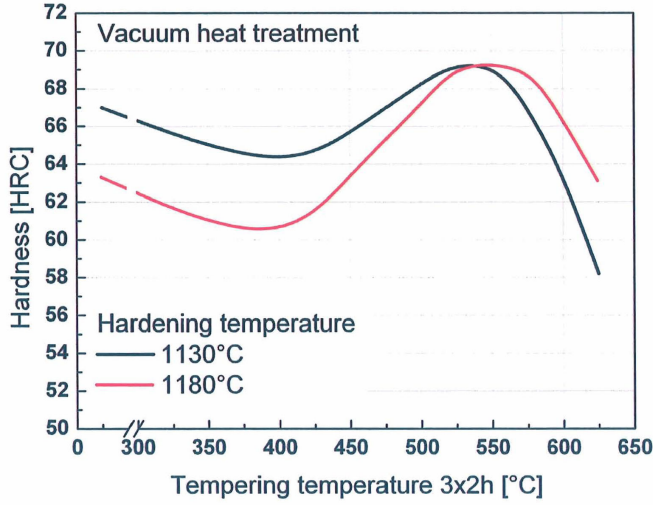
Quantitative phase diagram



- A....Austenite
- B....Bainite
- K....Carbide
- P....Pearlite
- M....Martensite
- RA...Retained Austenite

- 1....Edge or Face
- 2....Core
- 3....Jominy test: distance from quenched end

Tempering Chart



Holding time 3 x 2 hours
Specimen size: square 25 mm

Fiziksel özellikler

Sıcaklık (°C)	20
Yoğunluk (kg/dm ³)	8,1
Termal iletkenlik (W/(m.K))	20
Özgül ısı kapasitesi (kJ/kg K)	0,429
Spes. elektrik direnci (Ohm.mm ² /m)	0,52
Elastikiyet modülü (10 ³ N/mm ²)	220

Termal genleşmeler

Sıcaklık (°C)	100	200	300	400	500	600	700
Termal genleşme (10 ⁻⁶ m/(m.K))	11	11,5	11,9	12,3	12,4	12,5	12,5

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.

voestalpine BÖHLER Edelstahl GmbH & Co KG
 Mariazeller Straße 25
 8605 Kapfenberg, AT
 T. +43/50304/20-0
 E. info@bohler-edelstahl.at
<https://www.voestalpine.com/bohler-edelstahl/de/>

voestalpine

ONE STEP AHEAD.