

SOĞUK İŞ 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 K497 MICROCLEAN is a cold work tool steel manufactured using powder metallurgy and belongs to the group of 9% vanadium steels. The high carbide content makes this steel highly resistant to wear. It has lower hardness and wear resistance than K294 MICROCLEAN (10% vanadium steel). Nevertheless, this material has better toughness. BÖHLER K497 MICROCLEAN is used in situations where wear resistance is the decisive factor and compressive strength is of secondary importance. This material is not only used in cold work applications, but is also popular at lower hardness levels as a wear resistant alternative in mold making.

Erime rotası

[Powder metallurgy](#)

Özellikler

- > Tokluk ve Süneklik : yüksek
- > Aşınma Direnci : yüksek
- > Basınç Dayanımı : yüksek
- > Boyutsal kararlılık : çok yüksek

Uygulamalar

- > Cold Forming
- > Fine Blanking, Stamping, Blanking
- > Makine Mühendisliği için Genel Parçalar

Kimyasal Bileşim

C	Si	Mn	Cr	Mo	V
1,85	0,85	0,50	5,30	1,30	9,00

Malzeme özellikleri

	Basınç Dayanımı	Isıl işlem sırasında boyutsal kararlılık	Sertlik	Aşındırıcı aşınma direnci	Aşınma direnci yapıştırıcı
BÖHLER K497 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
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 K360 ISODUR®	★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K390 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BÖHLER K490 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BÖHLER K888 MATRIX	★★★★★	★★★★★	★★★★★	★★	★★
BÖHLER K890 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★	★★★

Teslimat durumu

Annealed

Sertlik (HB)	maks. 277
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Isıl işlem

Soft annealing

Sıcaklık	870 kadar 900 °C	Neutral atmosphere. Protect steel from scaling and/or decarburization. Slow controlled cooling in furnace at a rate of 50 to 70°F/hr down to approx. 1000°F (540°C) then furnace or air cool to room temperature.
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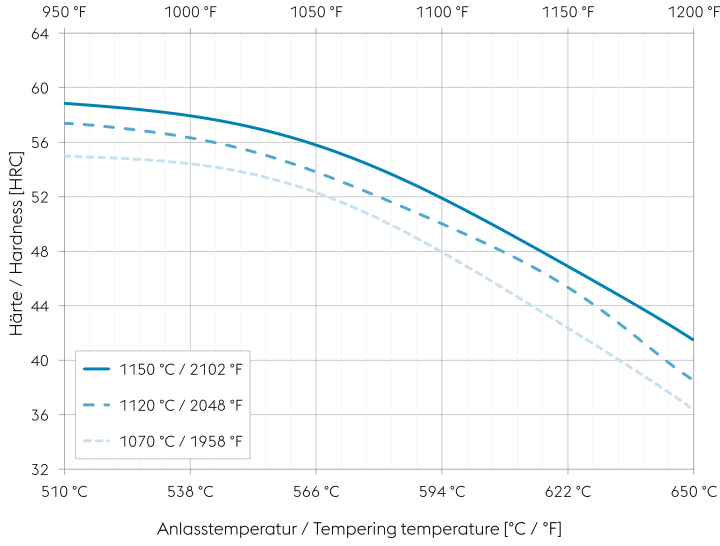
Stress relieving

Sıcaklık	595 kadar 700 °C	After through heating, soak for 1 to 2 hours in neutral atmosphere followed by slow cooling in furnace. Cool slowly to 930°F (500°C), then air cool.
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Sertleştirme ve Temperleme

Sıcaklık	1.040 kadar 1.150 °C	Preheating: To minimize distortion during heating for hardening, two preheat steps are recommended. First preheat at 1200 °F (650 °C) and equalize. Second preheat at 1500-1550 °F (820-840 °C) and equalize. After hardening, tempering to the desired working hardness, see tempering chart.
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Tempering chart



Fiziksel özellikler

Sıcaklık (°C)	20
Yoğunluk (kg/dm ³)	7,4
Termal iletkenlik (W/(m.K))	-
Özgül ısı kapasitesi (kJ/kg K)	-
Spes. elektrik direnci (Ohm.mm ² /m)	-
Elastikiyet modülü (10 ³ N/mm ²)	221

Termal genleşmeler

Sıcaklık (°C)	100	200	300	400	650
Termal genleşme (10 ⁻⁶ m/(m.K))	11,1	11,2	11,3	11,5	11,8

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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ONE STEP AHEAD.