

# PLASTIC MOULD STEELS

## HARDENABLE CORROSION RESISTANT STEEL

### 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 M390 MICROCLEAN is a martensitic chromium steel produced with powder metallurgy. Due to its alloying concept this steel offers extremely high wear resistance and high corrosion resistance – the perfect combination for best application properties.

### Erime rotası

[Powder metallurgy](#)

### Özellikler

- > Tokluk ve Süneklik : iyi
- > Aşınma Direnci : çok yüksek
- > İşlenebilirlik : iyi
- > Boyutsal kararlılık : çok yüksek
- > Cilalanabilirlik : çok yüksek
- > Korozyon direnci : iyi
- > Mikro temizlik : çok yüksek

### Uygulamalar

- > Gıda İşleme ve Hayvan Yemi Endüstrileri için Parçalar
- > Shearing / Machine Knives
- > Gıda İşleme Endüstrisi
- > Plastic Extrusion
- > Glasfibre reinforced plastics
- > Enjeksiyon kalıplama
- > Custom Hand Knives
- > Medical
- > Powder Pressing
- > Screws and Barrels
- > Elektronik Endüstrisi
- > Packaging
- > Pill punching dies

### Kimyasal Bileşim

C	Si	Mn	Cr	Mo	V	W
1,9	0,7	0,3	20	1	4	0,6

### Teslimat durumu

#### Soft annealed

Sertlik (HB)	maks. 280
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## Isıl İşlem

Stress relieving		
Sıcaklık	650 °C	After through-heating, soak for 4 hours in a neutral atmosphere. Furnace cooling down to 300 °C (570 °F), followed by air. After hardening and tempering, stress relieving has to be performed 50°C (90°F) below last tempering temperature.

Sertleştirme ve Temperleme		
Sıcaklık	1.100 kadar 1.180 °C	For hardening hold at temperature for 20 to 30 min (for hardening temperature 1180°C/ 2156°F 5-10 min). An optional sub-zero treatment at -80°C/-112°F can be applied after hardening. For highest corrosion resistance, temper once for a minimum of 2h at 200-300°C/ 392-572°F. For best wear resistance, temper twice for a minimum of 2h at 540-560°C/ 1004-1040°F (without sub-zero treatment) or 510-530°C/950-986°F (with sub-zero treatment). After each heat treatment step, material should be cooled down to approx. 30°C!

## Fiziksel özellikler

Sıcaklık (°C)	20
Yoğunluk (kg/dm <sup>3</sup> )	7,54
Termal iletkenlik (W/(m.K))	16,5
Özgül ısı kapasitesi (kJ/kg K)	0,48
Spes. elektrik direnci (Ohm.mm <sup>2</sup> /m)	-
Elastikiyet modülü (10 <sup>3</sup> N/mm <sup>2</sup> )	227

## Termal genleşmeler

Sıcaklık (°C)	100	200	300	400	500
Termal genleşme (10 <sup>-6</sup> m/(m.K))	10,38	10,67	10,96	11,24	11,56

**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.

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