

# HARDENABLE CORROSION RESISTANT STEELS

## Available Product Shapes

- Long Products
- Plates

## Product Description

BÖHLER M368 MICROCLEAN is a martensitic chromium steel produced with powder metallurgy. Due to its alloying concept, this steel offers high wear resistance, high toughness and high corrosion resistance – the perfect combination for best application properties.

## Properties

- High toughness & ductility
- High wear resistance
- Good machinability
- Very good dimensional stability
- Mirror finish polishability
- Very high corrosion resistance
- Very high micro-cleanliness

## Applications

- > Comps. for Food processing and Animal Feed
- > Plastic Extrusion
- > Medical
- > Components for Displays
- > Powder Pressing
- > Food processing Industry
- > Screws and Barrels
- > Camera lenses
- > Custom Hand Knives
- > Pill punching dies
- > Injection Molding
- > Standard Parts (Molds, Plates, Pins, Punches)
- > Packaging
- > Electronic Industry

## Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V	N
0.54	0.45	0.4	17.3	1.1	0.1	+

## Material characteristics

	Corrosion resistance	Machinability in as supplied condition	Polishability	Toughness	Wear resistance
	★★★★	★★★	★★★★	★★★	★★★
	★★★★	★★★★	★★	★★	★★
	★★★★★	★★★★	★★★★★	★★★★★	★★
	★★★	★★★	★★	★★	★★★
	★★	★	★★★	★★	★★★★
	★★	★	★★★	★★	★★★★★
	★★★★★	★★★★	★★★★★	★★★★	★★★

## Delivery condition

### Soft annealed

Hardness	max. 280 HB
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## Heat treatment

### Hardening and Tempering

Temperature (°C   °F)	980   1796 to 1000   1832	After through-heating, hold for 15 to 30 minutes. Quenching medium: N <sub>2</sub> . For big moulds we recommend a low hardening temperature of 980 °C (1796 °F) and a high tempering temperature from 505 °C to 520 °C (941 - 968 °F).
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## Physical Properties

Temperature (°C   °F)	20   68
Density (kg/dm <sup>3</sup>   lb/in <sup>3</sup> )	7.7   0.28
Thermal conductivity (W/(m.K)   BTU (IT) ft/hr/ft <sup>2</sup> /F)	22.3   12.88
Specific heat (J/(kg.K)   BTU (IT) lb/F)	460   109.87
Spec. electrical resistance (Ohm.mm <sup>2</sup> /m   10 <sup>-4</sup> Ohm.inch <sup>2</sup> /ft)	-
Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup>   10 <sup>3</sup> ksi)	219   31.76

## Thermal Expansions

Temperature (°C   °F)	100   212	200   392	300   572	400   752	500   932
Thermal expansion (10 <sup>-6</sup> m/(m.K)   10 <sup>-6</sup> inch/(inch.F))	10.3   5.722	10.82   6.011	11.2   6.222	11.56   6.422	11.87   6.594

For more information see [www.voestalpine.com/boehler-edelstahl](http://www.voestalpine.com/boehler-edelstahl)

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