

PLASTIC MOULD STEELS

HARDENABLE CORROSION RESISTANT STEEL

Available Product Variants

- Long Products*
- Plates

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

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.

Process Melting

- Powder metallurgy

Properties

- > Toughness & Ductility : high
- > Wear Resistance : high
- > Machinability : good
- > Dimensional stability : very high
- > Polishability : very high
- > Corrosion resistance : very high
- > Micro-cleanliness : very high

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
- > Glasfibre reinforced plastics

Chemical composition (wt. %)

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

Delivery condition

Soft annealed	
Hardness (HB)	max. 280

Heat treatment

Hardening and Tempering

Temperature	980 to 1,000 °C 1,796 to 1,832 °F	For hardening hold at temperature for 15 to 30 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 250-350°C/482-662°F. For best wear resistance, temper twice for a minimum of 2h at 505-520°C/941-968°F (without sub-zero treatment) or 490-505°C/914-941°F (with sub-zero treatment). After each heat treatment step, material should be cooled down to approx. 30°C!
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Physical Properties

Temperature (°C °F)	20 68
Density (kg/dm ³ lb/in ³)	7.7 0.28
Thermal conductivity (W/(m.K) BTU/ft h °F)	22.3 12.88
Specific heat (kJ/kg K BTU/lb °F)	0.46 0.1099
Spec. electrical resistance (Ohm.mm ² /m 10 ⁻⁴ Ohm.inch ² /ft)	-
Modulus of elasticity (10 ³ N/mm ² 10 ³ ksi)	219 31.76

Thermal Expansions between 20°C | 68°F and ...

Temperature (°C °F)	100 212	200 392	300 572	400 752	500 932
Thermal expansion (10 ⁻⁶ m/(m.K) 10 ⁻⁶ inch/inch.°F)	10.3 5.7	10.82 6	11.2 6.2	11.56 6.4	11.87 6.6

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.