

# PLASTIC MOULD STEELS

## PREHARDENED CORROSION RESISTANT STEEL

### Application Segments

Plastic Mould

### 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 M303 is a corrosion-resistant, martensitic chromium steel with very good toughness, corrosion resistance, good wear resistance and improved machinability and polishability. Compared to 1.2316, BÖHLER M303 has better homogeneity and is approved for food and beverage contact.

### Process Melting

Airmelted

### Properties

- > Toughness & Ductility : very high
- > Wear Resistance : high
- > Machinability : very high
- > Dimensional stability : good
- > Corrosion resistance : very high
- > Polishability : very high
- > No heat treatment necessary
- > Prehardened

### Applications

- > Components for Displays
- > Electronic industry
- > Packaging industry
- > Hotrunner systems
- > Machine Components
- > Blow Molding
- > Lamps/Lenses for Automotive
- > Plastic Extrusion
- > Filling
- > Mechanical Engineering
- > Components for food processing and animal feed
- > Injection Moulding
- > Screws and Barrels
- > Extrusion

### Technical data

Material designation		Standards	
~1.2316	SEL	4957	EN ISO
X38CrMo16	EN		

### Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni	N
0.27	0.3	0.65	14.5	1	0.85	+

### Delivery condition

Hardened and Tempered	
Hardness (HB)	290 to 330

### Heat treatment

Stress relieving		
Temperature	max. 550 °C	Prehardened material: When stress-relieving the material after processing, keep the material at temperature in a neutral atmosphere for at least 2 hours after complete heating, then slowly cool the oven at 20°C [68 °F]/hour to 200°C [392 °F], then cool in air.
Temperature		Newly hardened and tempered material: Carry out the stress relief tempering treatment at approx. 50°C [122 °F] below the tempering temperature. After complete heating, hold at temperature for 1 to 2 hours in a neutral atmosphere, then slowly cool down the furnace.

### Physical Properties

Temperature (°C)	20
Density (kg/dm <sup>3</sup> )	7.72
Thermal conductivity (W/(m.K))	22.8
Specific heat (kJ/kg K)	0.465
Spec. electrical resistance (Ohm.mm <sup>2</sup> /m)	-
Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup> )	218

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

Temperature (°C)	100	200	300	400	500	600
Thermal expansion (10 <sup>-6</sup> m/(m.K))	10.5	10.8	11.1	11.4	11.7	12.1

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. 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](mailto:info@bohler-edelstahl.at)  
<https://www.voestalpine.com/bohler-edelstahl/de/>