

PLASTIC MOULD STEELS - HEAT TREATABLE STEELS AND PRECIPITATION HARDENING STEELS

Available Product Shapes

[Long Products](#)
[Plates](#)

Product Description

BÖHLER M238 is a hardened and tempered, not corrosion resistant plastic mould steel. Because of the Ni-addition, there is no hardness decrease in the center of large sizes (up to 600 mm). A special melting technology offers good machinability.

Properties

- Very high toughness & ductility
- Good wear resistance
- Good machinability
- Good dimensional stability
- Very good polishability
- No heat treatment necessary
- Pre-hardened

Applications

- > Injection Molding
- > Standard Parts (Molds, Plates, Pins, Punches)
- > Tool Holders (milling, drilling, turning & chucks)
- > General Components for Mechanical Engineering
- > Lamps/Lenses for Automotive
- > Hotrunner systems

Technical data

Material designation		Standards	
1.2738	SEL	4957	EN ISO
40CrMnNiMo8-6-4	EN		

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni
0.38	0.3	1.5	2	0.2	1.1

Material characteristics

	Etchability	Machinability in as supplied condition	Polishability	Through hardenability	Toughness	Wear resistance
BÖHLER M238	★★	★★★	★★★	★★★★	★★★★	★★
BÖHLER M200	★	★★★★★	★★	★	★★	★★
BÖHLER M238 HIGH HARD	★★★★	★★	★★★★	★★★★	★★★	★★★★
BÖHLER M261	★★	★★★★	★★	★★★	★★	★★★
BÖHLER M268 VMR®	★★★★★	★★	★★★★★	★★★★	★★★★★	★★★★
BÖHLER M461	★★★	★★★	★★★	★★★	★★★	★★★

Delivery condition

Hardened and Tempered	
Hardness	290 to 330 HB

Heat treatment

Hardening and Tempering		
Temperature (°C °F)	840 1544 to 860 1580	Oil. After through soaking, hold for 15 - 30 minutes.

Stress relieving		
Temperature (°C °F)	500 932	In hardened and tempered condition approx. 30 to 50 °C (86 to 122 °F) below the tempering temperature / after through heating, Hold at temperature in neutral atmosphere for 1 to 2 hours. Slow cooling in furnace

Nitriding		
Temperature (°C °F)	max. 480 896	All nitriding processes are applicable.

Physical Properties

Temperature (°C °F)	20 68
Density (kg/dm ³ lb/in ³)	7.81 0.28
Thermal conductivity (W/(m.K) BTU (IT) ft/hr/ft ² /F)	35.2 20.34
Specific heat (J/(kg.K) BTU (IT) lb/F)	465 111.06
Spec. electrical resistance (Ohm.mm ² /m 10 ⁻⁴ Ohm.inch ² /ft)	-
Modulus of elasticity (10 ³ N/mm ² 10 ³ ksi)	212 30.75

Thermal Expansions

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))	11.88 6.6	12.44 6.911	13 7.222	13.45 7.472	13.85 7.694

For more information see www.voestalpine.com/boehler-edelstahl

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.