

HARDENABLE CORROSION RESISTANT STEELS

Available Product Shapes

Long Products

Plates

Product Description

BÖHLER M398 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 highly wear-resistant tools.

Properties

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

Applications

- > Comps. for Food processing and Animal Feed
- > Shearing / Machine Knives
- > Food processing Industry
- > Plastic Extrusion
- > Injection Molding
- > Custom Hand Knives
- > Medical
- > Powder Pressing
- > Screws and Barrels
- > Electronic Industry
- > Packaging

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V	W
2.7	0.5	0.5	20	1	7.2	0.7

Material characteristics

	Corrosion resistance	Machinability in as supplied condition	Polishability	Toughness	Wear resistance
BÖHLER M398 MICROCLEAN®	★★	★	★★★	★★	★★★★★
BÖHLER M310 ISOPLAST®	★★★★	★★★★	★★	★★	★★
BÖHLER M333 ISOPLAST®	★★★★★	★★★★	★★★★★	★★★★★	★★
BÖHLER M340 ISOPLAST®	★★★	★★★	★★	★★	★★★
BÖHLER M368 MICROCLEAN®	★★★★	★★★	★★★★	★★★	★★★
BÖHLER M390 MICROCLEAN®	★★	★	★★★	★★	★★★★

Delivery condition

Soft annealed

Hardness	max. 330 HB
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Heat treatment

Stress relieving

Temperature (°C °F)	650 1202	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.
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Hardening and Tempering

Temperature (°C °F)	1120 2048 to 1180 2156	After through-heating, hold for: 20 – 30 minutes for a hardening temperature of 1100 – 1150 °C (2010 – 2100 °F) 5 – 10 minutes for a hardening temperature of 1180 °C (2155 °F) Quenching media: oil, N ₂ .
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Physical Properties

Temperature (°C °F)	20 68
Density (kg/dm ³ lb/in ³)	7.46 0.27
Thermal conductivity (W/(m.K) BTU (IT) ft/hr/ft ² /F)	15.2 8.78
Specific heat (J/(kg.K) BTU (IT) lb/F)	490 117.03
Spec. electrical resistance (Ohm.mm ² /m 10 ⁻⁴ Ohm.inch ² /ft)	-
Modulus of elasticity (10 ³ N/mm ² 10 ³ ksi)	231 33.5

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))	10.4 5.778	10.6 5.889	10.9 6.056	11.2 6.222	11.5 6.389

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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M398 MICROCLEAN (PM) EN – 06.2022

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ONE STEP AHEAD.