

PLASTIC MOULD STEELS - HEAT TREATABLE STEELS AND PRECIPITATION HARDENING STEELS

Available Product Shapes

Long Products

Plates

Product Description

BÖHLER M261 is a precipitation-hardening steel grade for plastic moulds, featuring excellent machinability in the as-supplied, i.e. solution annealed and aged, condition. There is no need for an additional heat treatment, significantly shortening the throughput time.

Properties

- Good toughness & ductility
- Good wear resistance
- Very good machinability
- Good dimensional stability
- Good polishability

Applications

- > Injection Molding
- > Cold Forming
- > Standard Parts (Molds, Plates, Pins, Punches)
- > Hotrunner systems
- > Tool Holders (milling, drilling, turning & chucks)

Technical data

Material designation	
X13NiCuAlSi4-1-1	EN
X13NiCuAl4-1-1	

Chemical composition (wt. %)

C	Si	Mn	S	Cr	Ni	Cu	Al
0.13	0.3	2	0.15	0.35	3.5	1.2	1.2

Material characteristics

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

Delivery condition

Solution annealed + precipitation hardened

Hardness	340 to 390 HB
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Heat treatment

Precipitation hardening

Temperature (°C °F)	For temperatures see age hardening chart.
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Physical Properties

Temperature (°C °F)	20 68
Density (kg/dm ³ lb/in ³)	7.73 0.28
Thermal conductivity (W/(m.K) BTU (IT) ft/hr/ft ² /F)	29 16.76
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)	0.37 1.75
Modulus of elasticity (10 ³ N/mm ² 10 ³ ksi)	204 29.59

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))	12.63 7.017	13.06 7.256	13.5 7.5	13.89 7.717	14.27 7.928

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

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