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Buderus Corrosion-Resistant Plastic Mould Steel 2316 ISO-B MOD

	C	Si	Mn	P	S	Cr	Ni	Mo
Typical analysis	0.28	0.30	0.95	0.030	0.003	14.2	~ 0.50	1.10
Chemical composition as per SEL	0.33–0.45	≤ 1.00	≤ 1.50	≤ 0.030	≤ 0.030	15.5–17.5	≤ 1.00	0.80–1.30

Figures in % by mass

Register of European Steels (SEL)	~ X 38 CrMo 16
DIN EN ISO 4957	~ X 38 CrMo 16
AFNOR	Z 35 CD 17
AISI	~ 422

Characteristics

Modified corrosion-resistant plastic mould steel, polishable, etch-grainable, economic to machine.

Applications

Injection moulds, mould inserts, slit dies, profile dies, extrusion tools, drop forging tools and coaxial housings for processing PVC amino plastics and additives; blow moulds.

Important note: When processing amino-plastics and PVC alloys, excessively high temperatures (> 160 °C) can cause formation of highly aggressive cleavage products such as hydrochloric acid HCl, which can corrode the surface of the mould. No mould steel is resistant to that.
The production temperature should therefore not exceed 160 °C.

Delivered condition

Quenched and tempered to 265–310 HB (≙ approx. 900–1050 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 10.0	20–250 °C 12.0	20–500 °C 13.2
Thermal conductivity (W/mK)	20 °C 23.0	250 °C 24.0	500 °C 25.0
Young's modulus (GPa)	20 °C 215	250 °C 203	500 °C 180



* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

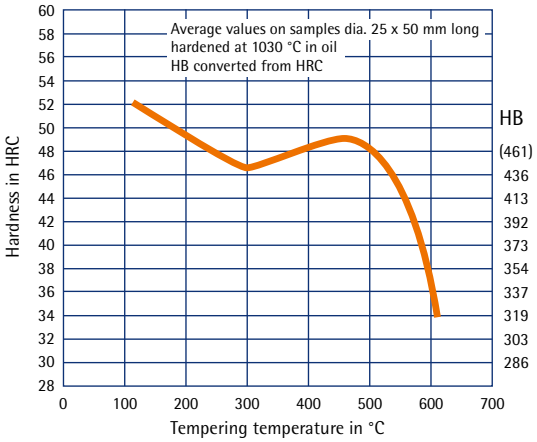
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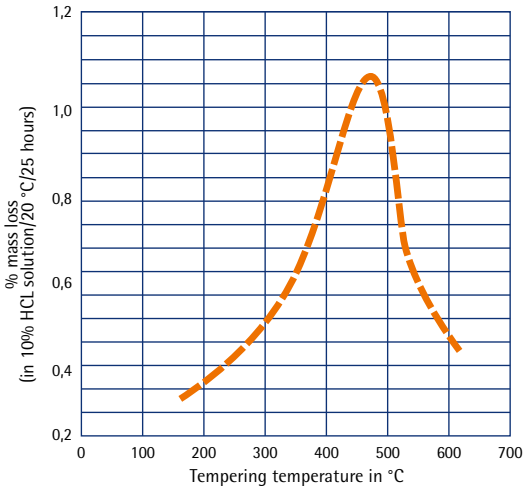
2316 ISO-B MOD

Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 590 °C in the quenched and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	820 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	1030 °C 1 minute per mm wall thickness
Quenching hardness	Max. 52 HRC	in oil or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	~ 265–310 HB	

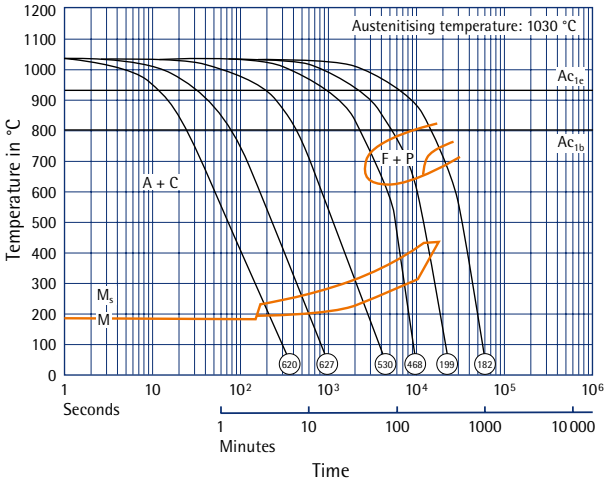
Tempering curve



Effect of the tempering temperature on corrosion resistance



TTT curve (continuous)



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