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Buderus Corrosion-Resistant Plastic Mould Steel 2083 ISO-B

	C	Si	Mn	P	S	Cr
Typical analysis	0.42	0.40	0.40	0.030	0.003	13.0
Chemical composition as per SEL	0.36–0.42	≤ 1.00	≤ 1.00	≤ 0.030	≤ 0.030	12.5–14.5

Figures in % by mass

Register of European Steels (SEL)	X 40 Cr 14
DIN EN ISO 4957	X 40 Cr 14
AFNOR	Z 40 C 14
AISI	420

Characteristics

Corrosion-resistant plastic mould steel for processing chemically aggressive injection-moulding compounds, with good polishing and machining properties.

Applications

Mould inserts

Delivered condition

Annealed to max. 241 HB
Hardened and tempered to customer specification on request

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 11.0	20–250 °C 12.5	20–500 °C 13.5
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



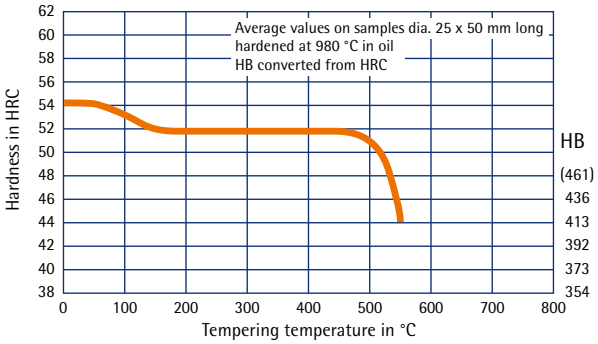
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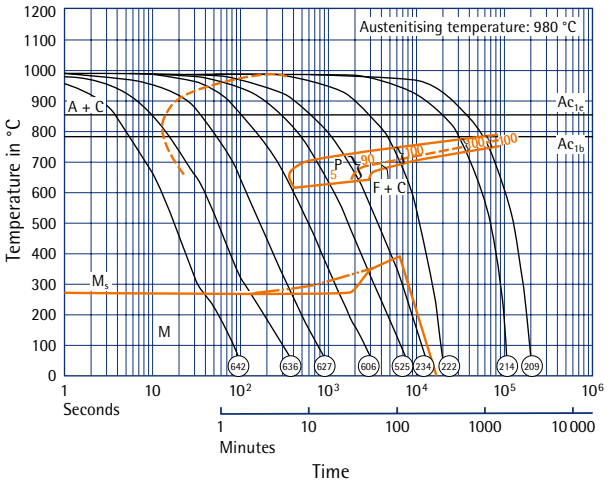
Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 650 °C in the annealed state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	820 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	980 °C 1 minute per mm wall thickness
Quenching hardness	Max. 56 HRC	in oil or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	50–54 HRC	

Note on hardening: To avoid pitting, holding at hardening temperature must not be done in salt baths, but packed or in a vacuum. Quenching in nitric salts should likewise be avoided with the hot bath method of vacuum hardening.

Tempering curve



TTT curve (continuous)



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