

## I 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	20–250 °C	20–500 °C
	11.0	12.5	13.5
Thermal conductivity (W/mK)	20 °C	250 °C	500 °C
	23.0	24.0	25.0
Young's modulus (GPa)	20 °C	250 °C	500 °C
	215	203	180

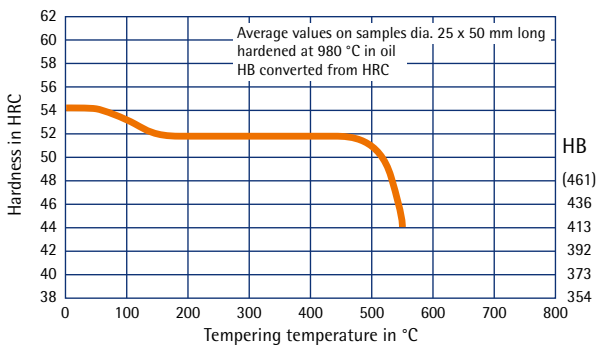
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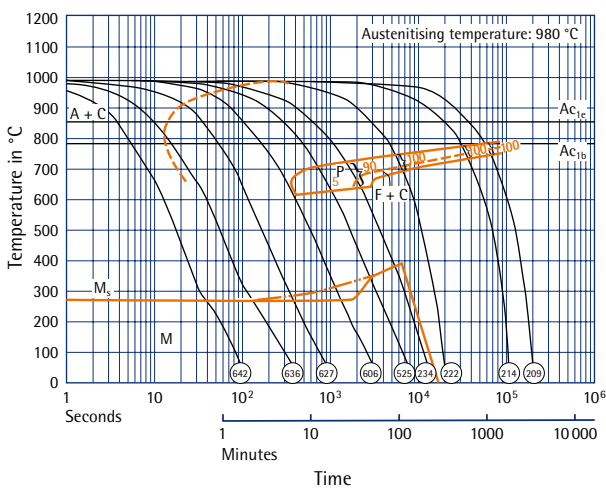
Heat treatment	
Stress relieving	Temperature: Approx. 650 °C in the annealed state Duration: 1 hour per 50 mm wall thickness Cooling: Furnace
Soft annealing	Temperature: 820 °C Duration: 1 hour per 25 mm wall thickness Cooling: Furnace
Hardening	Temperature: 980 °C Duration: 1 minute per mm wall thickness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