

## Buderus Corrosion-Resistant Plastic Mould Steel 2085 MOD

	C	Si	Mn	P	S	Cr	Ni	Mo	others
Typical analysis	0.28	0.30	0.95	0.030	0.050	14.2	~ 0.50	1.10	+
Chemical composition as per SEL	0.28–0.38	≤ 1.00	≤ 1.40	≤ 0.030	0.050–0.100	15.0–17.0	≤ 1.00	/	

Figures in % by mass

Register of European Steels (SEL)	X 33 CrS 16
DIN EN ISO 4957	~ Z 33 CS 16
AISI	~ 422 + S

### Characteristics

Corrosion-resistant, sulphur-alloyed plastic mould steel with modified chemical composition and increased hardness in comparison to 1.2085 Standard.

### Applications

Mould frames and mould fittings for corrosion-resistant injection-moulding dies.  
Not suitable for contouring mould parts.

**Note:** Because of its controlled sulphur content (economic to machine) and the high hardness level, this material has restricted toughness properties.

### Delivered condition

Quenched and tempered to 335–380 HB ( $\Delta$  approx. 1130–1290 MPa)\*

### Physical properties (reference values)

Thermal expansion coefficient ( $10^{-6}/K$ )	20–100 °C	20–250 °C	20–500 °C
	10.0	12.0	13.2
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

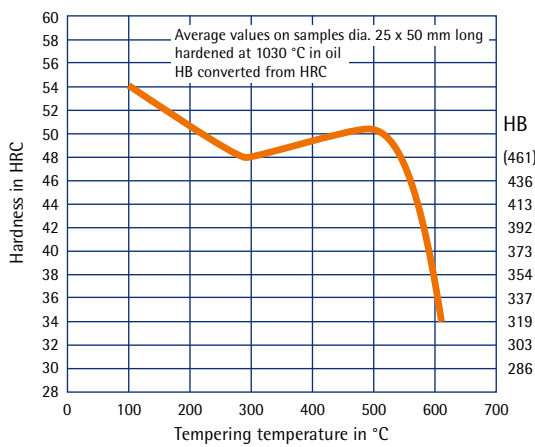
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\* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

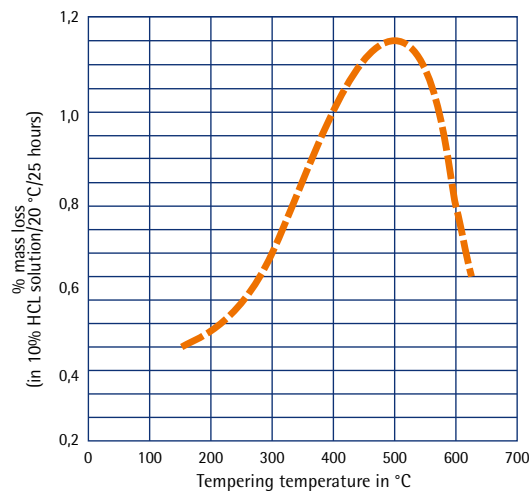
## 2085 MOD

Heat treatment	
Stress relieving	Temperature: Approx. 500 °C in the quenched and tempered 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: 1030 °C Duration: 1 minute per mm wall thickness
Quenching hardness	Max. 53 HRC in oil or vacuum
Tempering	Temperature: See tempering curve Duration: 1 hour per 25 mm wall thickness Cooling: Air
Working hardness	~ 335–380 HB

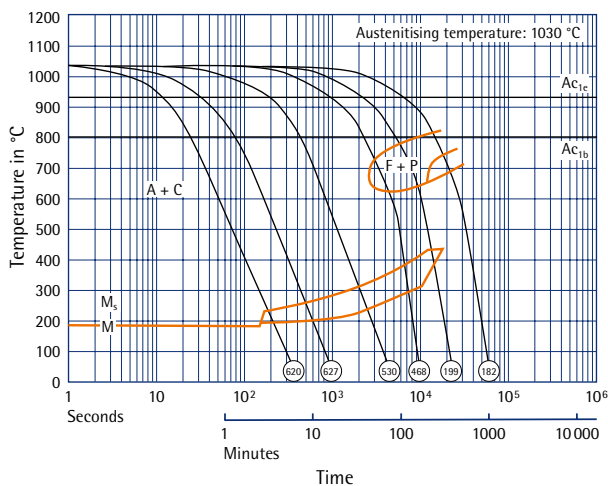
### Tempering curve



### Effect of the tempering temperature on corrosion resistance



### TTT curve (continuous)



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