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Buderus Plastic Mould Steel/ Cold Work Tool Steel 2842

	C	Si	Mn	P	S	Cr	V
Typical analysis	0.90	0.30	2.00	0.025	0.015	0.40	0.10
Chemical composition as per SEL	0.85–0.95	0.10–0.40	1.80–2.20	≤ 0.030	≤ 0.030	0.20–0.50	0.05–0.20

Figures in % by mass

Register of European Steels (SEL)	90 MnCrV 8
DIN EN ISO 4957	90 MnCrV 8
AFNOR	90 MV 8
AISI	O 2
BS	~ BO 2

Characteristics

For surface hardening; tool steel with good machinability and low distortion, high resistance to wear, and low polishability requirement.

Applications

Highly stressed plastic moulds, mould inserts for high hardness and abrasive stress.
Blanking dies of all types, such as punches for sheet steel up to 6 mm thick and plastics, thread cutting tools.
Wear plates.

Delivered condition

Annealed to max. 229 HB

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 12.2	20–250 °C 13.5	20–500 °C 14.7
Thermal conductivity (W/mK)	20 °C 33.0	250 °C 32.7	500 °C 31.8
Young's modulus (GPa)	20 °C –	250 °C –	500 °C –

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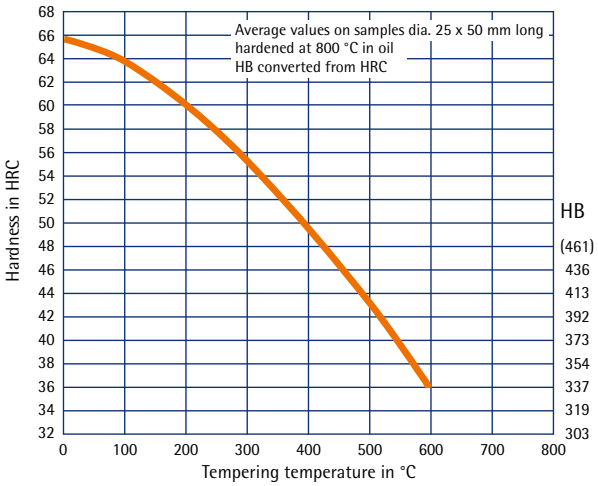
Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 650 °C in the annealed state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	680 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	800 °C 1 minute per mm wall thickness
Quenching hardness	Max. 66 HRC	in oil, hot bath or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	57–62 HRC	

Notes on hardening: Larger dimensions from 800–820 °C, full through-hardenability possible up to 50 mm thickness. Hot bath hardening is to be used only up to 35 mm thickness.

Tempering curve



TTT curve (continuous)