

Formadur® 2312

Plastic Mould Steel

Data Sheet
 40CrMnMoS8-6¹⁾
 AISI P20+S / AFNOR 40CMD8S

28.04.26 REV.2.

Chemical composition in %

C	Cr	Mn	Mo	S
0.40	1.90	1.50	0.20	0.05

Material Properties

- As-delivered condition of 280 to 325 HB
- Improved machinability in comparison with Formadur 2311
- Polishable

Typical Applications

- Plastic moulds
- Mould frames for plastic moulds and pressure casting moulds
- Recipient sleeves
- Brake dies

Physical properties

Coefficient of thermal expansion (10⁻⁶ K⁻¹)

	Annealed	Quenched and tempered
20–100 °C	12.5	12.3
20–200 °C	13.4	13.0
20–300 °C	13.9	13.07

Thermal conductivity (W/m.K)

	Annealed	Quenched and tempered
100 °C	40.2	39.8
150 °C	40.9	40.4
200 °C	40.3	40.4
250 °C	40.0	39.9
300 °C	39.0	39.0

Heat treatment

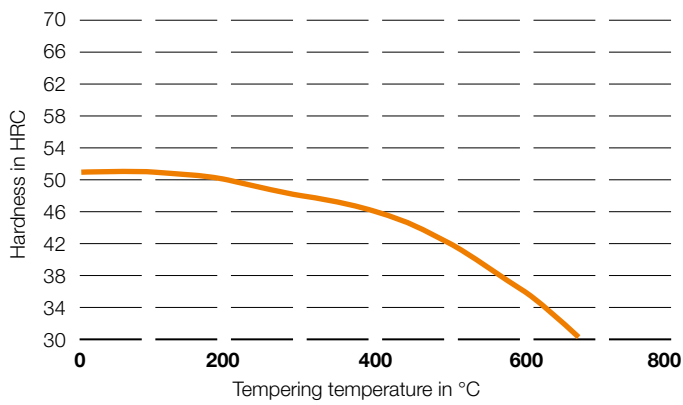
Soft annealing	710–740 °C	Furnace	≤ 325 HB
Stress-relief annealing Annealed	approx. 600 °C	Furnace	
Stress-relief annealing Q+T	approx. 30–50 °C under tempering temperature	Furnace	
Hardening	840–870 °C	Oil or saltbath, 180–220 °C	51 HRC after quenching
Tempering	100 °C		51
	200 °C		50
	300 °C		48
	400 °C		46
	500 °C		42
	600 °C		36
	700 °C		28

¹⁾ S can be raised between 0.05 and 0.1 % whereas Ni can be left out completely.

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Tempering



Time-temperature-transformation

