Material Code:

AISI P20

DE - Brand:

MCM

Chemical composition:
(Typical analysis in %)

C	Mn	Cr	Mo				
0,40	1,50	1,90	0,20				

Steel properties:

Plastic mould steel that is usually supplied in a quenched and tempered condition. Good machinability, better polishability, compared to AISI P20+S (1.2312). Similar to 1.2311.

Applications:

Plastic moulds, frames for plastic pressure dies, hydro-forming tools.

Condition of delivery:

Quenched and tempered, 280 - 325 HB
(950 - 1100 MPa according to DIN EN ISO 18265 Table A.1)

Physical properties:

		68-212°F	68-392°F	68-572°F	68-752°F
Thermal expansion coefficient	$\left[\frac{10^{-6}\cdot m}{m \cdot K}\right]$	12,1	12,7	13,2	13,6

		68°F	662°F
Thermal conductivity	$\left[\frac{W}{m \cdot K}\right]$	39,6	39,2

Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
1310 - 1365°F	furnace	max. 235 HB

Stress relief annealing
The recommendation 930 - 1020°F is valid for quenched and tempered condition.
In the soft annealed condition stress relieving between 1110 - 1200°F is possible.

Temperature	Cooling	
930 - 1020°F	furnace	

Hardening

Temperature	Cooling	Tempering
1525 - 1600°F	oil or hot bath 355 - 430°F	see tempering diagram

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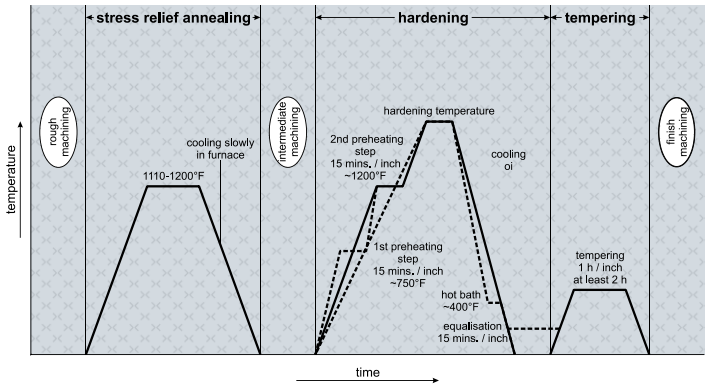
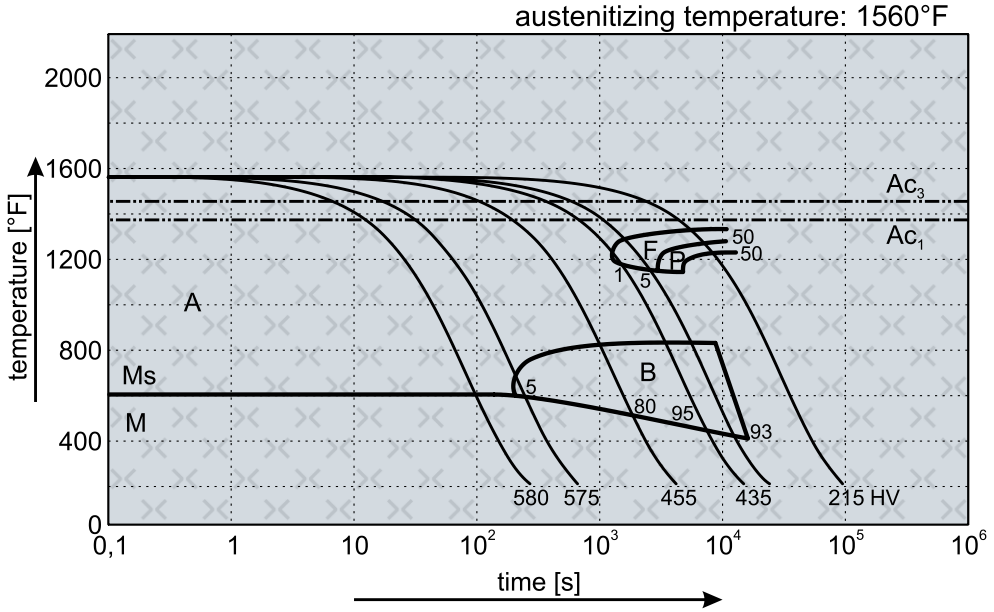
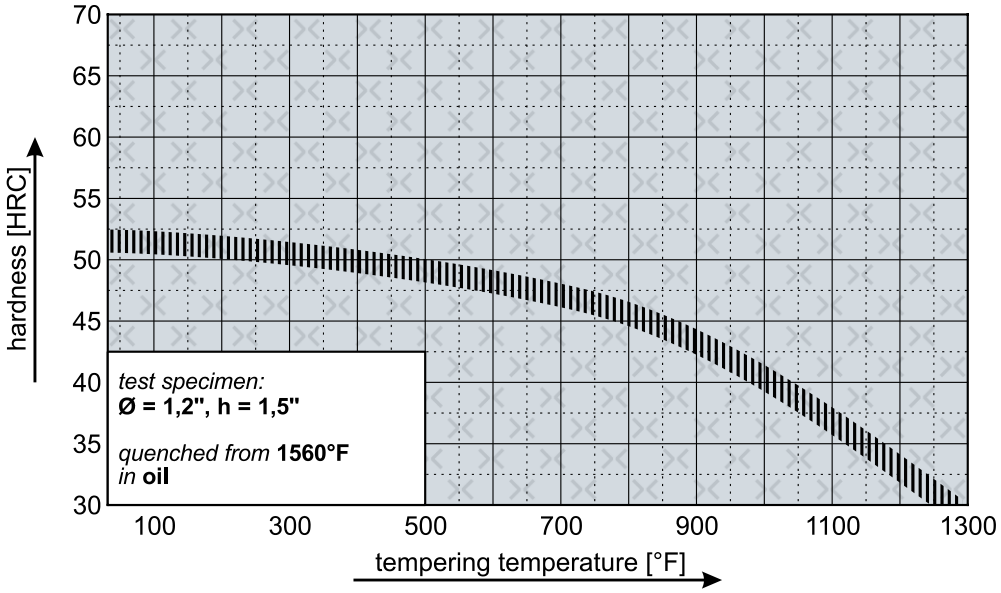
(AISI P20) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.