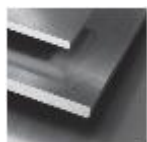


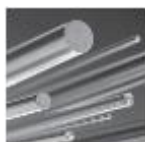
Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2738
Description	40CrMnNiMo8-6-4
AISI/SAE	P20+Ni
Search for alternatives in the ABRAMS STEEL GUIDE®	www.steel-guide.eu/alternatives/P20Ni

Specifications



€co-Präz® [€co]
L: 500 mm



Precision round steel
with machining allowance [PRS/BA]
peeled / rough-turned
L: 500 mm
L: 1.000 mm

Chemical composition AISI/SAE P20+Ni (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni
0,35 - 0,45	0,2 - 0,4	1,3 - 1,6	0 - 0,03	0 - 0,03	1,8 - 2,1	0,15 - 0,25	0,9 - 1,2

Physical properties

Hardness (delivery condition)	max. 325 HB, tempered						
Tensile strength R _m (as received condition)	approx. 1.100 N/mm ²						
Working hardness	max. 50 HRC						
Thermal expansion coefficient 10 ⁻⁶ m/(m • K)	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C	20 - 500°C	20 - 600°C	20 - 700°C
	11,1	12,9	13,4	13,8	14,2	14,6	14,9
Thermal conductivity W/(m • K)	20°C	350°C	700°C				
	34,5	33,5	32,0				

Technical properties

Steel grade with focus on plastic mould making; nickel additives for a better through-hardenability (constant strength), also for thicknesses > 400 mm. Low sulphur steel and therefore polishable and grainable.

Applications

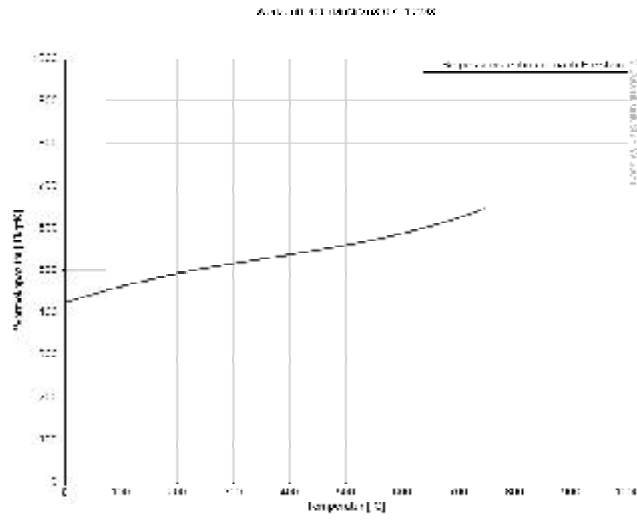
Plastic moulds, moulding frames, die casting moulds, dies, forging tools, metal extrusion tools, tube presses, hydroforming tools.

Heat treatment

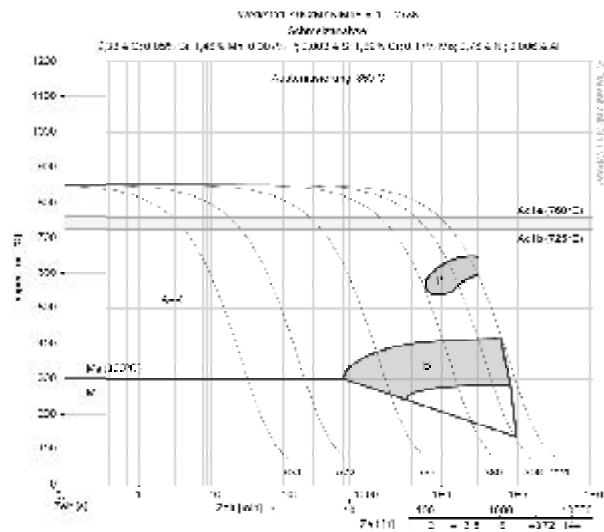
	Temperature	Cooling	Hardness				
Soft annealing	710 - 740°C	Furnace	max. 325 HB				
	Temperature	Cooling	Hardness after quenching				
Stress relief annealing	550 - 600°C	Furnace					
	Temperature	Quenching in	Hardness after quenching				
Hardening	840 - 870°C	Polymer, oil	51 HRC				
Tempering	100°C	200°C	300°C	400°C	500°C	600°C	700°C
	51 HRC	50 HRC	48 HRC	46 HRC	42 HRC	39 HRC	28 HRC



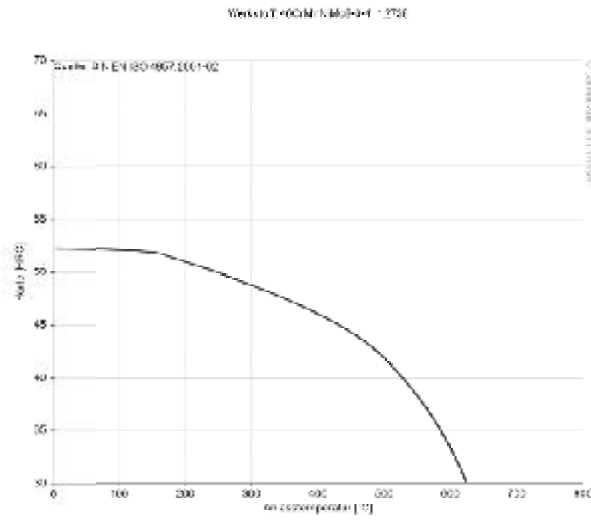
Thermal capacity diagram



Continuous ZTU-diagram



Tempering diagram



The data shown here is to be used only as an indication of the statistics, thus we accept no liability.
Diagrams are taken from Datenbank StahlWissen Dr. Sommer Werkstofftechnik
Issued: 2012

ABRAMS PREMIUM STEEL

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