

Steel grade

Material No. / Werkstoff-Nr.	PREMIUM HSS PM 30
Description	PMHS6-5-3-8
AISI/SAE	PM 30
Search for alternatives in the ABRAMS STEEL GUIDE [®]	www.steel-guide.eu/alternatives/PM30

Specifications



€co-Präz[®] [€co]
L: 300 mm

Chemical composition PM 30 (reference value %)

C	Cr	Mo	V	W	Co
1,3 - 1,3	4,2 - 4,2	5,0 - 5,0	3,1 - 3,1	6,4 - 6,4	8,5 - 8,5

Physical properties

Hardness (delivery condition)	max. 300 HB, annealed			
Tensile strength R _m (as received condition)	approx. 995 N/mm ²			
Working hardness	max. 66 HRC			
Thermal expansion coefficient 10 ⁻⁶ m/(m • K)	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C
	10,9	11,1	11,4	11,5
Thermal conductivity W/(m • K)	20°C	350°C	700°C	
	24,4	28,0	27,4	

Technical properties

Powder metallurgical manufactured high performance high-speed steel for cold work tools and cutting tools. It convinces with its high wear resistance, good toughness and best cutting edge retention. The addition of cobalt with approx. 8,5% has a positive effect on the high temperature strength or rather the red hardness, tempering resistance and modulus of elasticity.

Applications

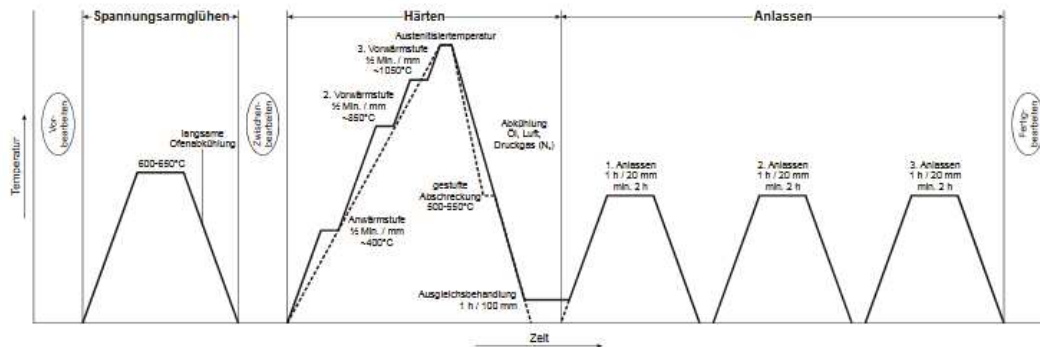
Machining tools, milling cutters, thread cutting tools for materials that are difficult to machine, fine-blanking tools, drills, broaches, cold forming tools, blanking tools, deep drawing tools, die set.

Heat treatment

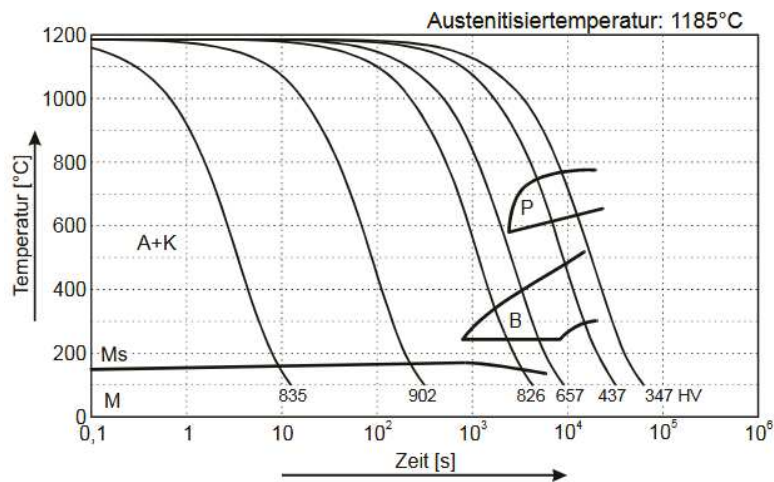
	Temperature	Cooling	Hardness
Soft annealing	870 - 900°C	Furnace	max. 300 HB
Stress relief annealing	Temperature	Cooling	
	600 - 650°C	Furnace	
Hardening	Temperature	Quenching in	
	1100 - 1190°C	Air, oil, compressed gas (N ₂), basin (500 - 550°C)	



Heat treatment scheme



Continuous TZU-diagram



Tempering / Austenitizing Temperature

Anlasstemperatur	Austenitisiertemperatur			
	1100°C	1130°C	1160°C	1190°C
500°C	65,5 HRc	66,0 HRc	67,0 HRc	67,0 HRc
520°C	65,5 HRc	66,5 HRc	67,0 HRc	68,0 HRc
540°C	65,0 HRc	66,0 HRc	67,0 HRc	67,5 HRc
560°C	63,5 HRc	64,5 HRc	65,0 HRc	66,0 HRc
580°C	62,0 HRc	63,0 HRc	64,0 HRc	64,5 HRc
600°C	60,0 HRc	61,0 HRc	61,5 HRc	62,5 HRc

