

Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2085 / 1.2099
Description	X33CrS16 / ~X5CrS12
AISI/SAE	420FM
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Specifications



Precision flat steel with machining allowance [PFS/BA]
L: 500 mm
L: 1.000 mm



€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 420FM (reference value %)

C	Si	Mn	P	S	Cr	Ni
0,28 - 0,38	0 - 1,0	0 - 1,4	0 - 0,03	0,05 - 0,1	15,0 - 17,0	0 - 1,0

Physical properties

Hardness (delivery condition)	max. 330 HB, tempered
Tensile strength R_m (as received condition)	approx. 1.125 N/mm ²
Working hardness	max. 48 HRC*

Technical properties

Pre-hardened, corrosion-resistant plastic mould steel. Magnetisable with good machinability. Resistant to aggressive plastics and humid conditions. Because of the added sulphur it is easier to machine than steel grade AISI/SAE 1.2316. Further heat treatment is not intended.

*AISI/SAE 420FM will be delivered in tempered condition (approx. 33 HRC). Therefore it can be easily substituted with AISI/SAE 1.2099.

Applications

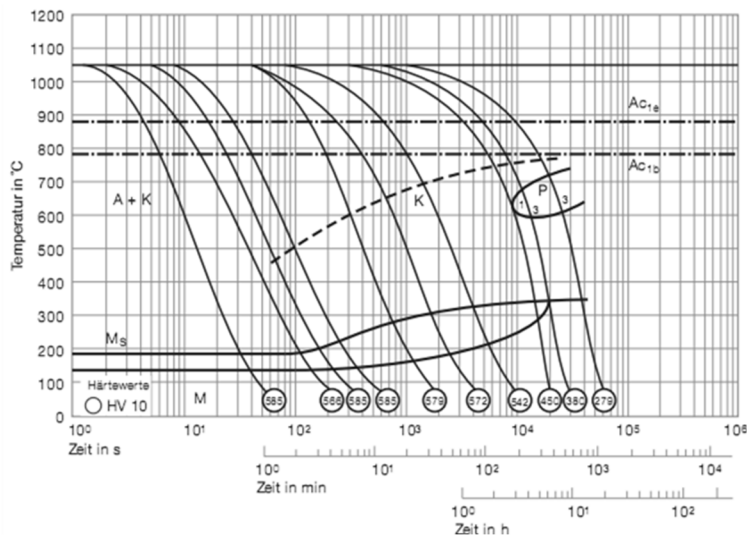
Mechanical engineering, apparatus engineering, plastic processing, injection tools, base plates, assembling parts, moulding frames, plastic moulds, extrusion tools, valves, steam valves, water valves, fittings parts, pump construction, pump rods, compressor construction, compressor parts, surgical instruments.

Heat treatment

Soft annealing	Temperature		Cooling		Hardness			
		850 - 880°C		Furnace		max. 330 HB		
Hardening	Temperature		Quenching in		Hardness after quenching			
		1000 - 1050°C		Oil	48 HRC			
Tempering	100°C	200°C	300°C	400°C	450°C	500°C	550°C	600°C
	48 HRC	48 HRC	47 HRC	46 HRC	47 HRC	47 HRC	36 HRC	30 HRC



Continuous ZTU-diagram



Tempering diagram

