

Steel grade

Material No.	PREMIUM 420RM
AISI	420RM
Search for alternatives in the ABRAMS STEEL GUIDE	www.abrams-steelguide.com/alternatives/420RM

Shapes



**Smart Flat Stock [Smart]
Standardized Precision Blanks**
L: 12"
L: 24"



**Smart Flat Stock Metric [SmartM]
Standardized Precision Blanks**
L: 300 mm
L: 600 mm

Chemical composition AISI 420RM (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni
0.33 - 0.45	0 - 1.0	0 - 1.5	0 - 0.045	0 - 0.03	15.5 - 17.5	0.8 - 1.3	0 - 1.0

Physical properties

Hardness (delivery condition)	max. 325 HB, tempered			
Tensile strength R_m (as received condition)	approx. 159.5 KSI			
Working hardness	max. 48HRC			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F
	10.4	10.8	11.2	11.6
Thermal conductivity $W/(m \cdot K)$	68°F			
	29.0			

Technical properties

Pre-hardened corrosion resistant chrome-steel with good polishing properties, heat resistance and wear resistance. Often used for processing chemically aggressive plastic materials (e.g. PVC). The material is conditionally acid resistant.

Applications

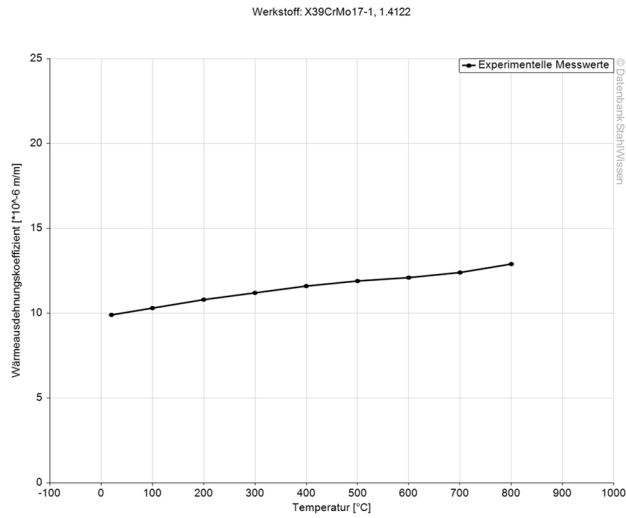
Mechanical engineering, marine engineering, apparatus engineering, plastic processing, plastic molds, extrusion tools, press molds, fitting tools, shafts, spindles, bolts, pistons, valves, steam valves, water valves, beater bars, fittings parts, pump construction, pump rods, compressor construction, compressor parts, surgical instruments.

Heat treatment

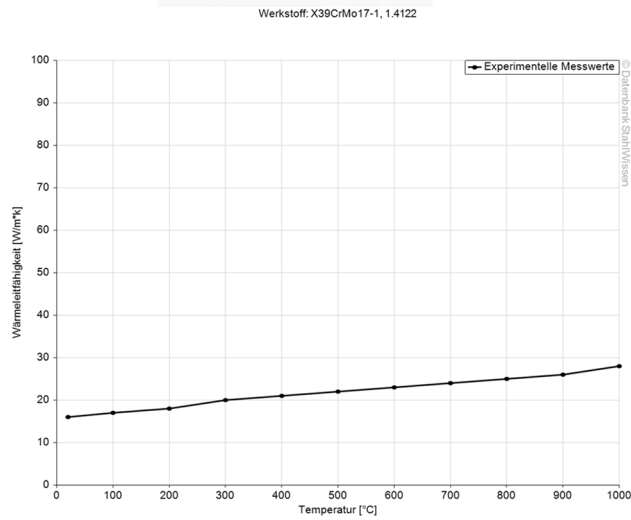
	Temperature	Cooling	Hardness	
Soft annealing	1382 - 1508°F	Furnace, Air	max. 325 HB	
Stress relief annealing	Temperature	Cooling		
	1112 - 1202°F	Furnace		
Hardening	Temperature	Quenching in		
	1832 - 1904°F	Hot basin (932 - 1022°F)		
Tempering	212°F	392°F	932°F	1112°F
	49 HRC	47 HRC	45 HRC	30 HRC



Thermal expansion coefficient diagram

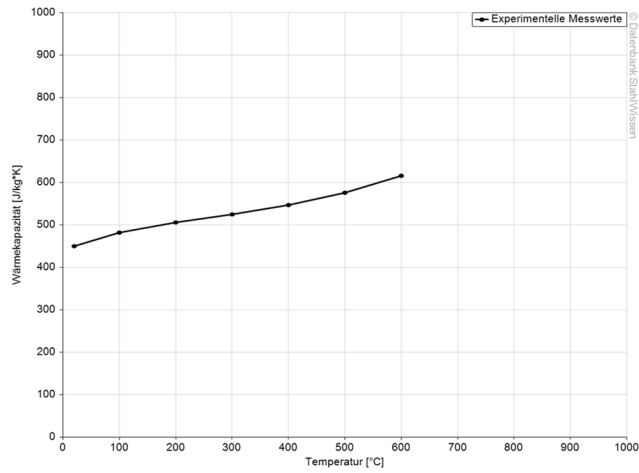


Thermal conductivity diagram



Thermal capacity diagram

Werkstoff: X39CrMo17-1, 1.4122

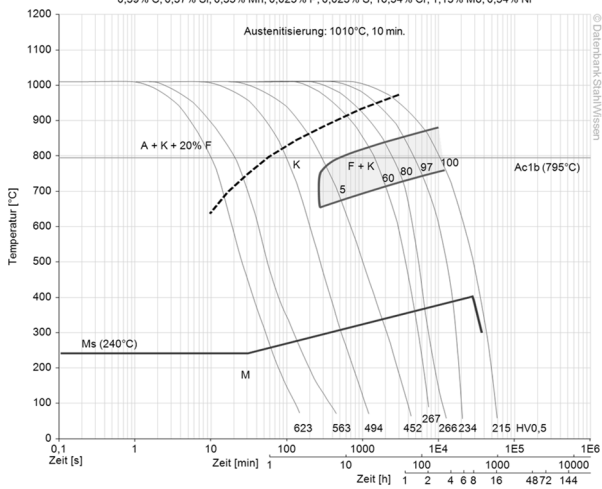


Continuous ZTU-diagrams

Werkstoff: X39CrMo17-1, 1.4122

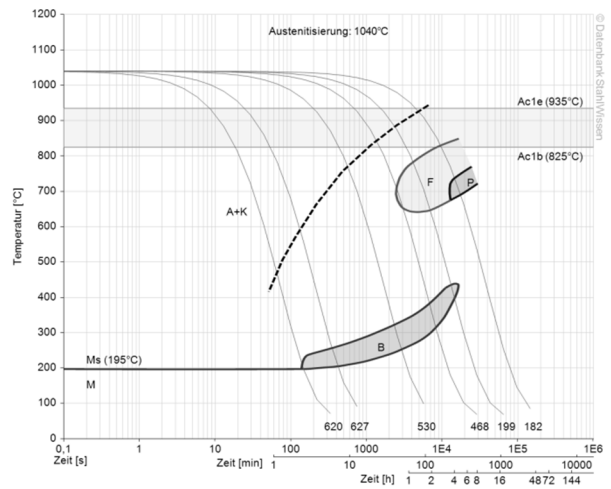
Schmelzanalyse:

0,39% C; 0,37% Si; 0,35% Mn; 0,025% P; 0,023% S; 16,54% Cr; 1,15% Mo; 0,54% Ni

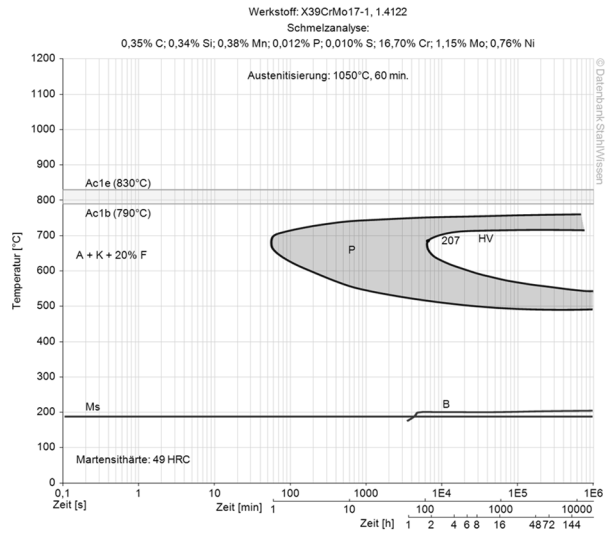


Werkstoff: X39CrMo17-1, 1.4122

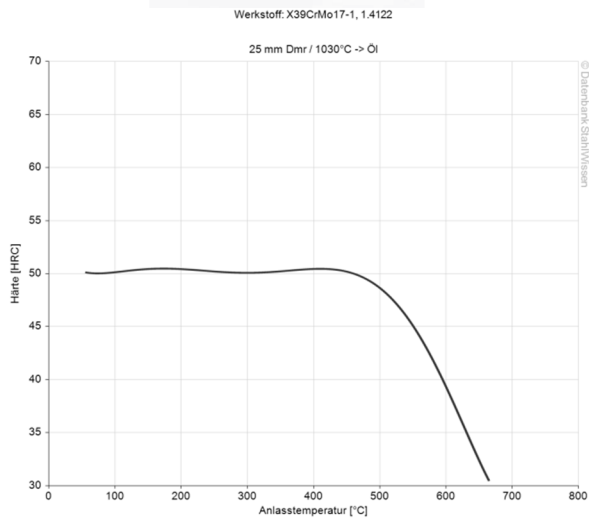
Austenitisierung: 1040°C



Isothermal 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

