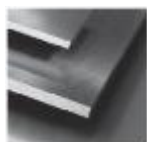


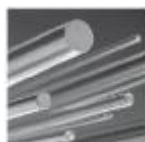
## Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2361
Description	X91CrMoV18
AISI/SAE	1.2361
Search for alternatives in the ABRAMS STEEL GUIDE®	<a href="http://www.steel-guide.eu/alternatives/1.2361">www.steel-guide.eu/alternatives/1.2361</a>

## Specifications



€co-Präz® [€co]  
L: 500 mm



**Precision round steel**  
**without machining allowance [PRS]**  
bright drawn / ground, ISO h9  
L: 1.000 mm  
**with machining allowance [PRS/BA]**  
L: 500 mm  
L: 1.000 mm

## Chemical composition AISI/SAE 1.2361 (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	Cu
0,86 - 0,96	0 - 1,0	0 - 1,0	0 - 0,045	0 - 0,03	17,0 - 19,0	0,9 - 1,3	0 - 0,3	0,07 - 0,12	0 - 0,3

## Physical properties

Hardness (delivery condition)	max. 265 HB, annealed			
Tensile strength $R_m$ (as received condition)	approx. 900 N/mm <sup>2</sup>			
Working hardness	max. 59 HRC			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C
	10,5	11,0	11,0	12,0
Thermal conductivity $W/(m \cdot K)$	20°C			
	29,0			

## Technical properties

Corrosion resistant martensitic chromium steel (approx. 18 % Cr) for cold work. Achieves, through heat treatment, an unusually high degree of hardness and wear resistance. Polishable to a long lasting high gloss.

## Applications

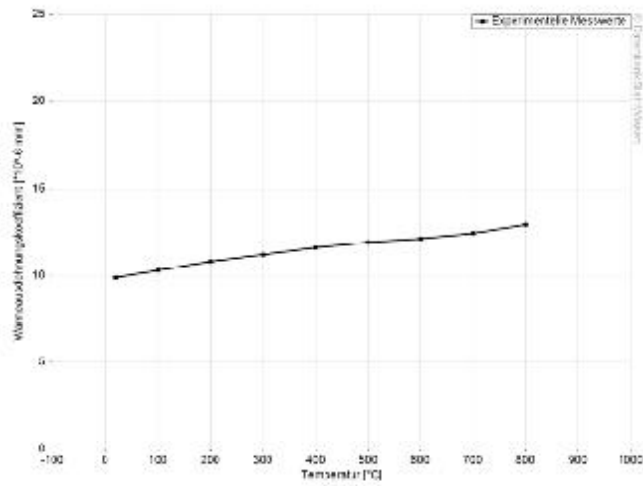
Cutting tools, knives, knife blades, cutlery, guide rails, wear parts, perforated discs, screw elements, pump shafts, scale pans, horizontal cutting, surgical instruments, plastic moulds, injection nozzles, roller bearings, ball bearings, machine construction, food industry, building industry.

## Heat treatment

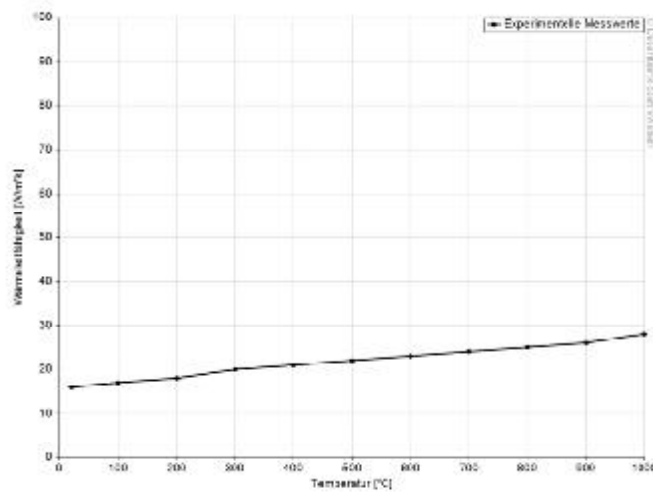
Soft annealing	Temperature		Cooling		Hardness		
		800 - 850°C		Slowly, e.g. Furnace		max. 265 HB	
Hardening	Temperature		Quenching in		Hardness after quenching		
		1000 - 1050°C		Oil		59 HRC	
Tempering	100°C	200°C	300°C	400°C	500°C	550°C	600°C
	58 HRC	56 HRC	54 HRC	54 HRC	54 HRC	50 HRC	40 HRC



## Thermal expansion coefficient diagram



## Thermal conductivity diagram



### ABRAMS PREMIUM STEEL

is a registered trademark of  
 Abrams Engineering Services GmbH & Co. KG  
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 Managing Director: Dipl.-Wi.-Ing. Dr. Juergen Abrams

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 General Partner: Abrams Engineering Verwaltungs GmbH  
 Amtsgericht Osnabrueck / Germany, HRB 20019

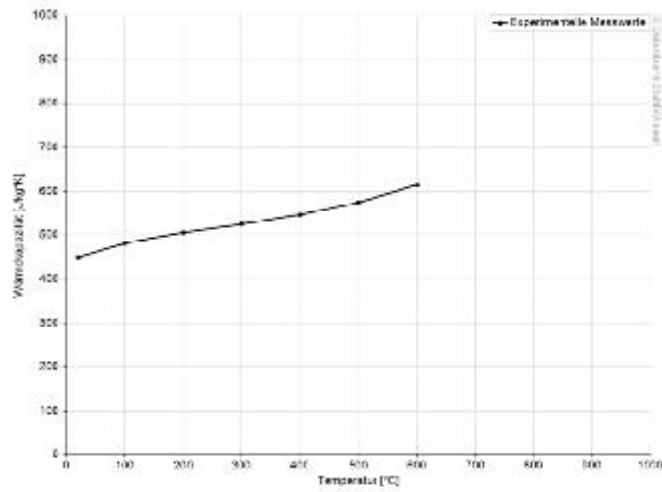
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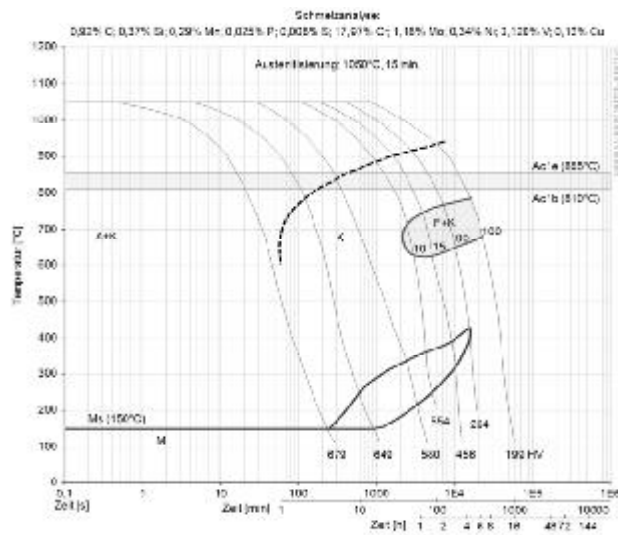
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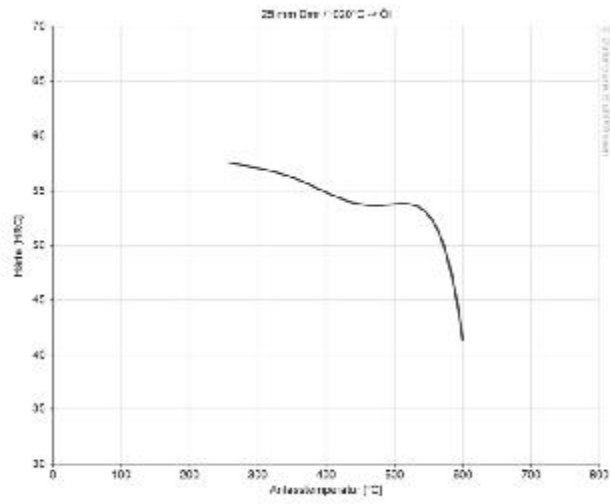
Thermal capacity diagram



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

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