

## Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2365
Description	32CrMoV12-28
AISI/SAE	H10; T20810
Search for alternatives in the ABRAMS STEEL GUIDE®	<a href="http://www.steel-guide.eu/alternatives/H10">www.steel-guide.eu/alternatives/H10</a>

## 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 H10 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V
0,28 - 0,35	0,1 - 0,4	0,15 - 0,45	0 - 0,03	0 - 0,02	2,7 - 3,2	2,5 - 3,0	0,4 - 0,7

## Physical properties

Hardness (delivery condition)	max. 229 HB, annealed						
Tensile strength $R_m$ (as received condition)	approx. 770 N/mm <sup>2</sup>						
Working hardness	max. 52 HRC						
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C	20 - 500°C	20 - 600°C	20 - 700°C
	11,8	12,5	12,7	13,1	13,5	13,6	13,8
Thermal conductivity $W/(m \cdot K)$	20°C		350°C	700°C			
	Annealed		32,8	34,5	32,2		
	Tempered		31,4	32,0	29,3		

## Technical properties

Hot work steel with high toughness, heat resistance and tempering resistance. Air-hardening steel grade with good thermal conductivity. Can be cooled with water.

## Applications

Extrusion presses, brass casting, press tools, die inserts, die casting moulds, plastic moulds, recipient bushes, pressure dies, press mandrels, tube extrusion mandrels, piecer plugs, press dies, block receivers, screw production, nut production, rivet production, bolts production, hot shear knives.

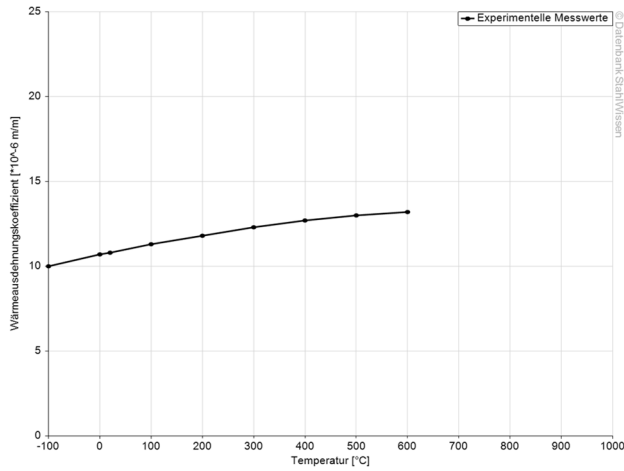
## Heat treatment

Soft annealing	Temperature		Cooling		Hardness				
	750 - 800°C		Furnace		max. 229 HB				
Stress relief annealing	Temperature		Cooling						
	600 - 650°C		Furnace						
Hardening	Temperature		Quenching in		Hardness after quenching				
	1030 - 1050°C		Oil, hot basin (500 - 550°C)		52 HRC				
Tempering	100°C	200°C	300°C	400°C	500°C	550°C	600°C	650°C	700°C
	51 HRC	50 HRC	50 HRC	50 HRC	52 HRC	50 HRC	47 HRC	40 HRC	34 HRC



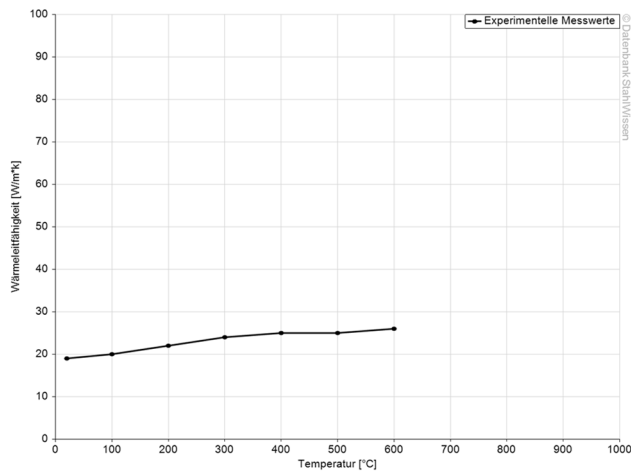
## Thermal expansion coefficient diagram

Werkstoff: 32CrMoV12-28, 1.2365



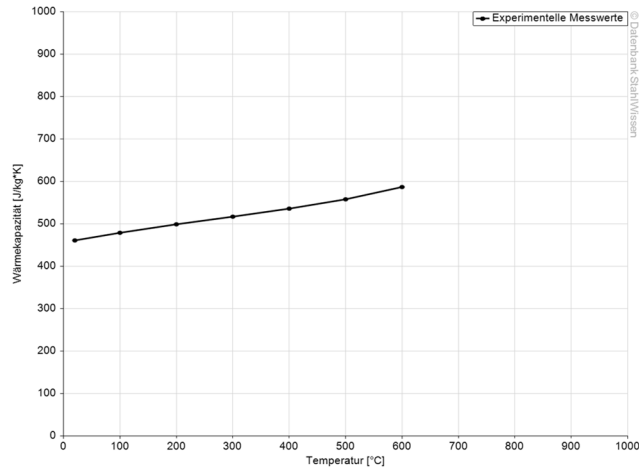
## Thermal conductivity diagram

Werkstoff: 32CrMoV12-28, 1.2365



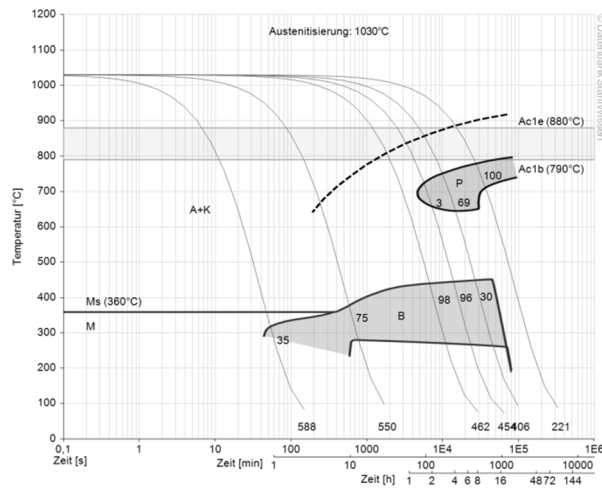
## Thermal capacity diagram

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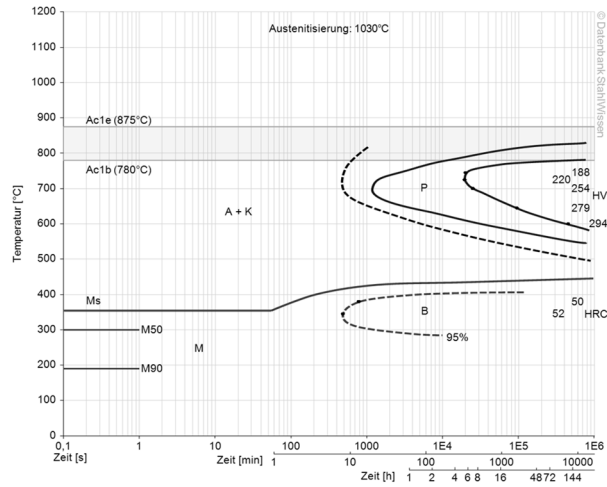
## Continuous ZTU-diagram

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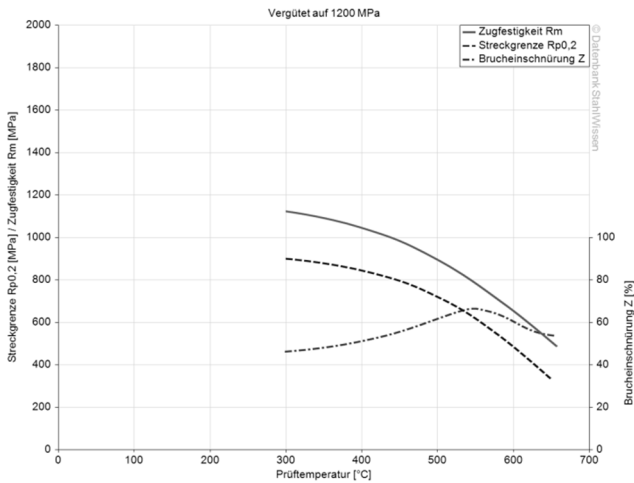
## Isothermal ZTU-diagram

Werkstoff: 32CrMoV12-28, 1.2365

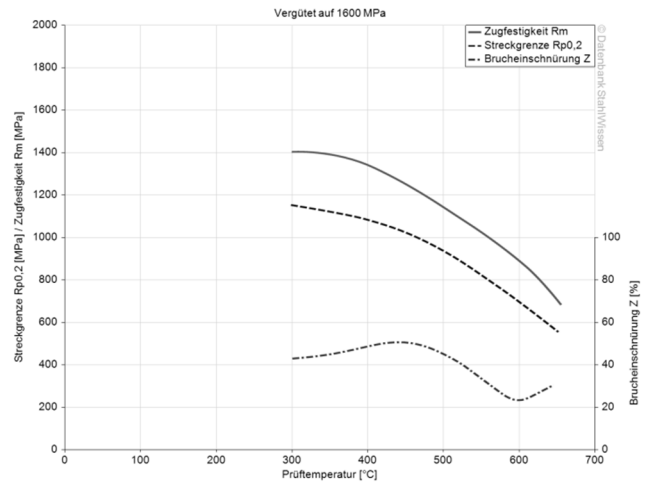


## Hardening and tempering diagrams

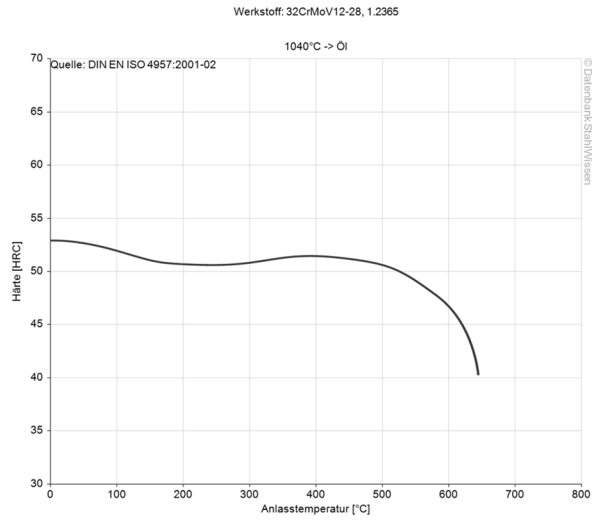
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## Tempering diagram



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

