

## Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2367
Description	X38CrMoV5-3
BS	1.2367
AISI/SAE	1.2367
Search for alternatives in the ABRAMS STEEL GUIDE®	<a href="http://www.steel-guide.co.uk/alternatives/1.2367">www.steel-guide.co.uk/alternatives/1.2367</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 BS 1.2367 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V
0.35 – 0.4	0.3 – 0.5	0.3 – 0.5	0 – 0.03	0 – 0.02	4.8 – 5.2	2.7 – 3.2	0.4 – 0.6

## 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. 54 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
	11.9	12.5	12.6	12.8	13.1	13.3	13.5
Thermal conductivity $W/(m \cdot K)$	20°C	350°C	700°C				
	Annealed	30.8	33.5	35.1			
	Tempered	29.8	33.9	35.3			

## Technical properties

Hot work steel with excellent toughness, excellent heat resistance and excellent tempering resistance. Good hardenability with high warp-resistance. Can be cooled with water.

## Applications

Dies, die inserts, extrusion presses, hot extrusion tools, die casting tools, slides, press mandrels, intermediate sleeves, die holders, profiling dies, profile mandrels, block receivers, hot shear knives, light metal processing, plastic moulds.

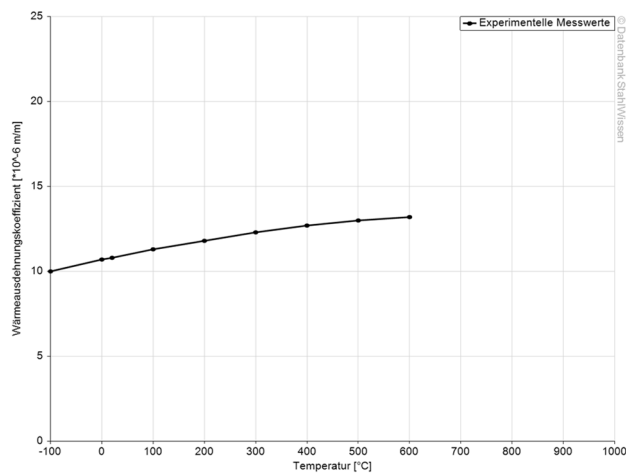


## Heat treatment

	Temperature	Cooling	Hardness						
Soft annealing	730 - 780°C	Furnace	max. 229 HB						
	Temperature	Cooling							
Stress relief annealing	600 - 650°C	Furnace							
	Temperature	Quenching in	Hardness after quenching						
Hardening	1020 - 1050°C	Air, oil, hot basin (500 - 550°C)	57 HRC						
	100°C	200°C	300°C	400°C	500°C	550°C	600°C	650°C	700°C
Tempering	57 HRC	55 HRC	53 HRC	52 HRC	55 HRC	55 HRC	52 HRC	45 HRC	36 HRC

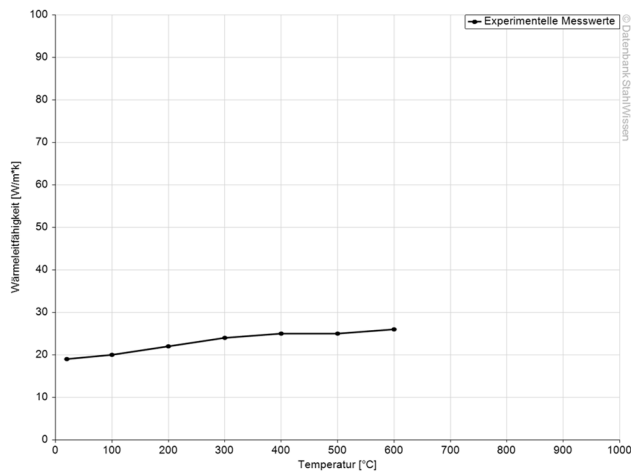
## Thermal expansion coefficient diagram

Werkstoff: X38CrMoV5-3, 1.2367

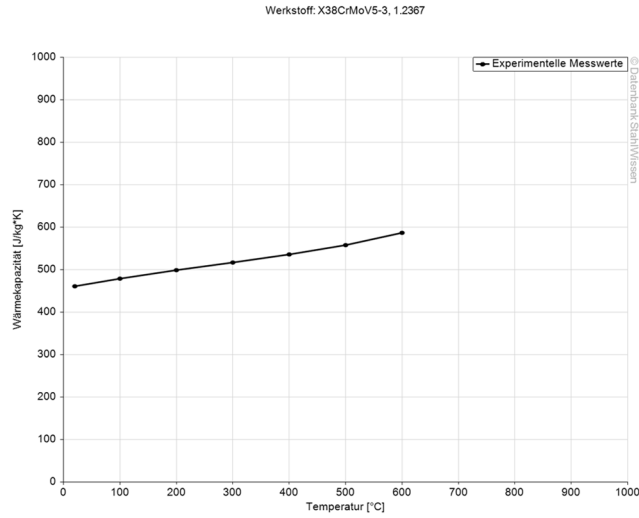


## Thermal conductivity diagram

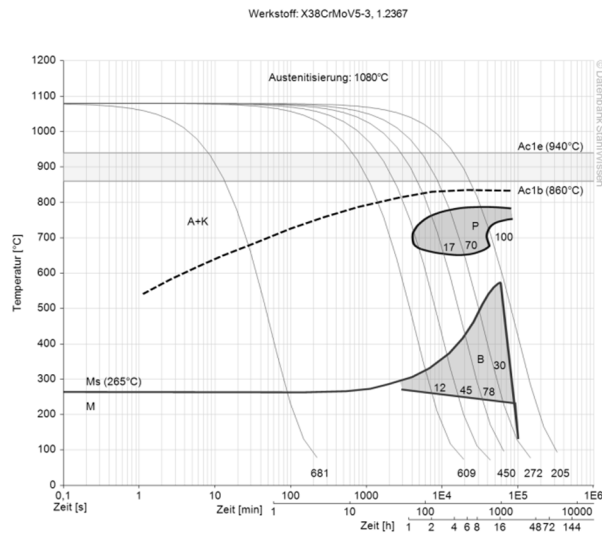
Werkstoff: X38CrMoV5-3, 1.2367



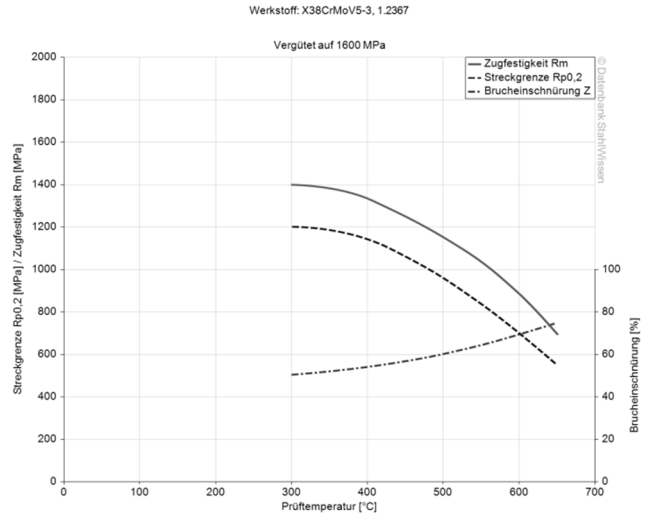
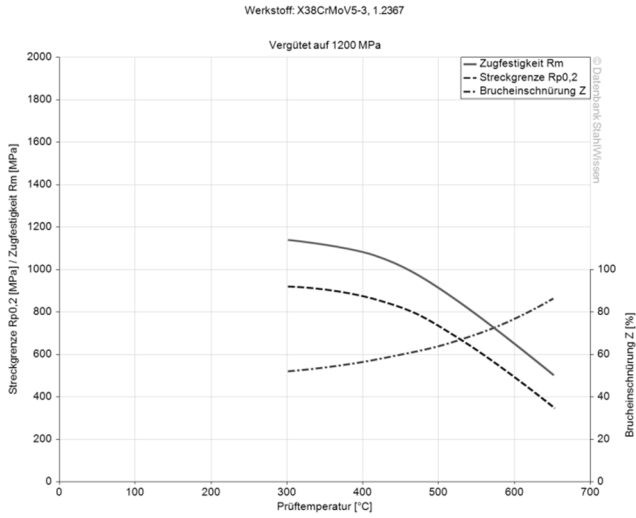
## Thermal capacity diagram



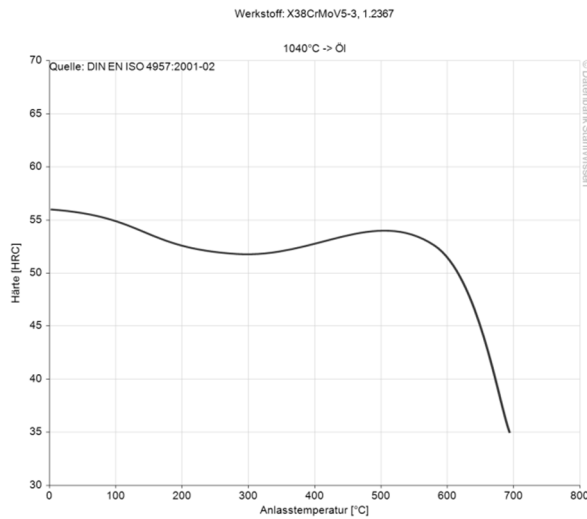
## Continuous ZTU-diagram



## Hardening and tempering diagrams



## 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

