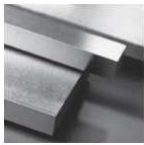


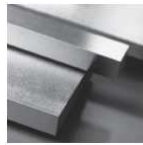
## Steel grade

Material No.	PREMIUM D2
AISI	D2; T30402
Search for alternatives in the ABRAMS STEEL GUIDE	<a href="http://www.abrams-steelguide.com/alternatives/D2">www.abrams-steelguide.com/alternatives/D2</a>

## Shapes



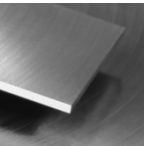
**Precision Ground Flat Stock regular [GFS reg]**  
L: 18"  
L: 36"



**Precision Ground Flat Stock oversize [GFS O/S]**  
L: 18"  
L: 36"



**Precision Ground Flat Stock Metric oversize [GFSM O/S]**  
L: 500 mm  
L: 1,000 mm



**Hard Flat Metric [HardM] Hardened Standardized Blanks Metric**  
L: 250 mm  
L: 500 mm



**EDM Block hardened [EDM]**  
Square: 4 - 12"



**Drill Rod [DR] Precision Round Bars**  
L: 36"



**Drill Rod Metric [DRM] Precision Round Bars Metric**  
L: 914 mm (36")



**Decarb Free Rounds [DCF] Oversize Round Bars**  
L: 18"  
L: 36"

## Chemical composition AISI D2 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V
1.45 - 1.6	0.1 - 0.6	0.2 - 0.6	0 - 0.03	0 - 0.03	11.0 - 13.0	0.7 - 1.0	0.7 - 1.0

## Physical properties

Hardness (delivery condition)	max. 255 HB, annealed (Erosion blockhardened, approx. 61 HRC)			
Tensile strength $R_m$ (as received condition)	approx. 124.7 KSI			
Working hardness	max. 62 HRC			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F
	10.5	11.5	11.9	12.2
Thermal conductivity $W/(m \cdot K)$	68°F	662°F	1292°F	
	16.7	20.5	24.2	

## Technical properties

Secondary-hardening, ledeburitic cold work steel, can be used for a wide range of applications. Low distortion, excellent wear resistance and good toughness. Temper-resistant, even at high hardening temperatures. In addition it can be nitrated without any reduction in hardness – even for cold work steel.



## Applications

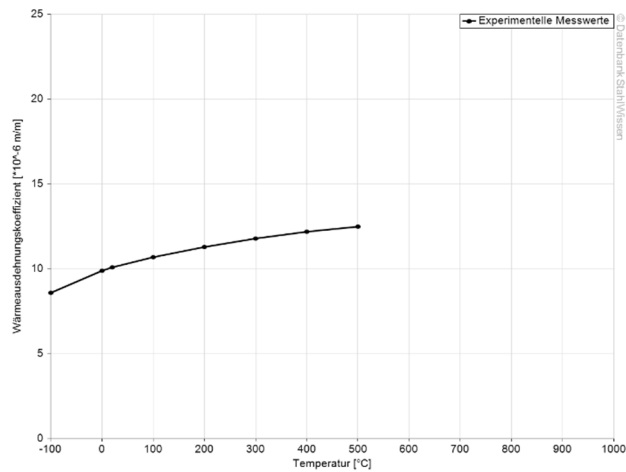
Blanking tools, precision cutting tools, dies, punches, thread rolling dies, broaches, milling cutters, press tools, shear knives, deep drawing dies, cold rollings, measuring tools, woodworking tools, cold pilger mandrels, plastic moulds.

## Heat treatment

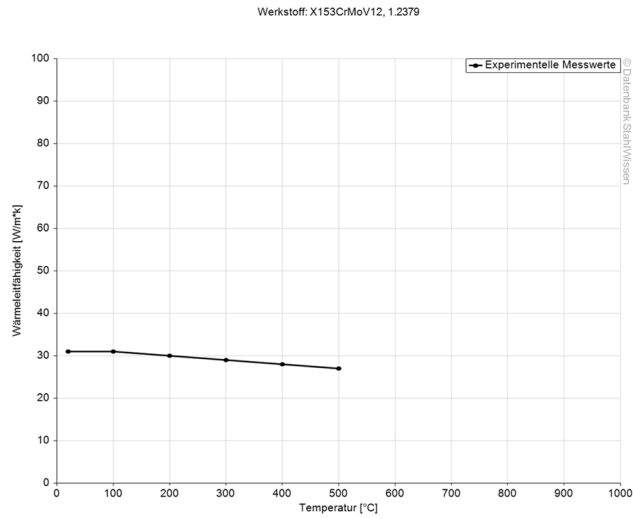
	Temperature		Cooling		Hardness			
<b>Soft annealing</b>	1526 - 1580°F		Furnace		max. 255 HB			
	Temperature		Cooling					
<b>Stress relief annealing</b>	1202 - 1292°F		Furnace					
	Temperature		Quenching in		Hardness after quenching			
<b>Hardening</b>	1832 - 1922°F		Air, oil, hot basin 932 - 1022°F)		63 HRC			
	212°F	392°F	572°F	752°F	932°F	977°F	1022°F	1112°F
<b>Tempering</b>	63 HRC	61 HRC	58 HRC	58 HRC	58 HRC	60 HRC	56 HRC	50 HRC

## Thermal expansion coefficient diagram

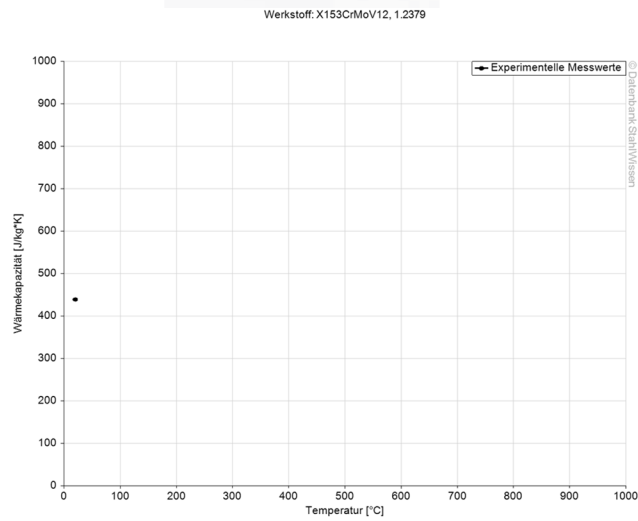
Werkstoff: X153CrMoV12, 1.2379



## Thermal conductivity diagram

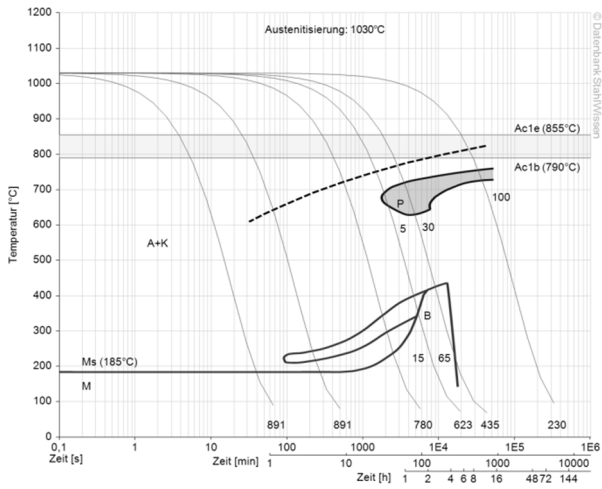


## Thermal capacity diagram

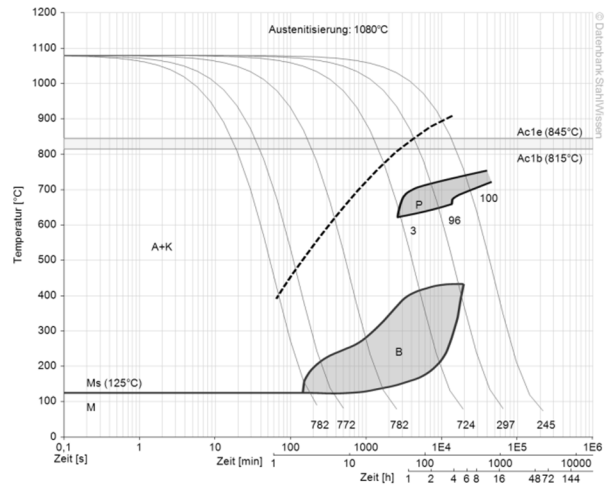


## Continuous ZTU-diagrams

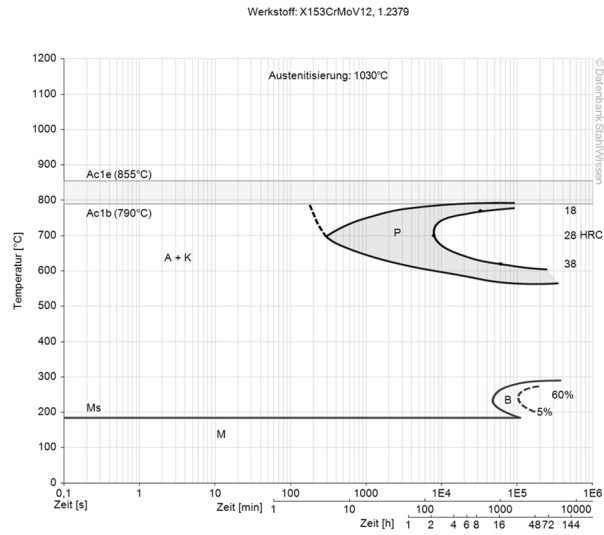
Werkstoff: X153CrMoV12, 1.2379



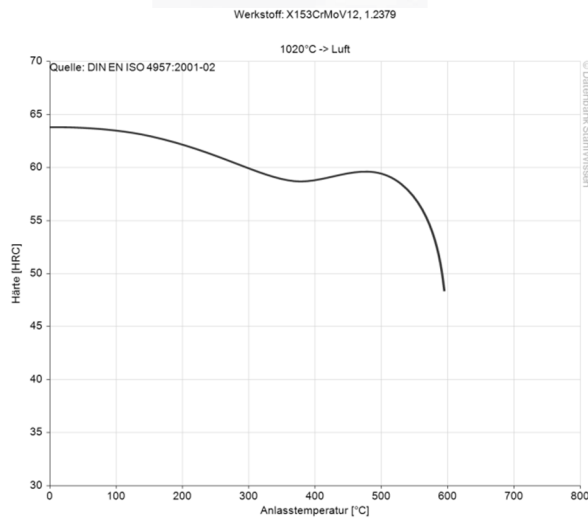
Werkstoff: X153CrMoV12, 1.2379



## 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

