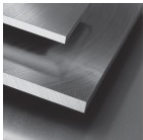


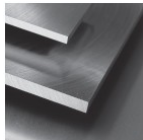
Steel grade

Material No.	PREMIUM S7
AISI	S7

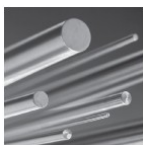
Shapes



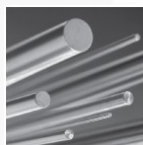
**Smart Flat Stock [Smart]
Standardized Precision Blanks**
L: 12"
L: 24"



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



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



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

Chemical composition AISI S7 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V
0.45 - 0.55	0.2 - 1.0	0.2 - 0.9	0 - 0.03	0 - 0.03	3.0 - 3.5	1.3 - 1.8	0 - 0.35

Physical properties

Hardness (delivery condition)	max. 225 BHN, annealed						
Tensile strength R_m (as received condition)	approx. 110.2 KSI						
Working hardness	max. 60 HRC						
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F	68 - 932°F	68 - 1112°F	68 - 1292°F
	11.7	12.9	13.3	13.8	14.1	14.3	14.6
Thermal conductivity $W/(m \cdot K)$	68°F	572°F	752°F				
	28.9	30.0	31.0				

Technical properties

This general purpose air hardening steel grade is both shock and impact resistance and also has good resistance to softening at moderately high temperatures. The combination of these properties makes it suitable for a number of hot as well as cold work applications. Working hardness: 56-60 HRC.

Applications

Cutting tools, cold forming and bending dies, plastic molding dies, shear blades, chisels, rivet sets, punches, driver bolts.

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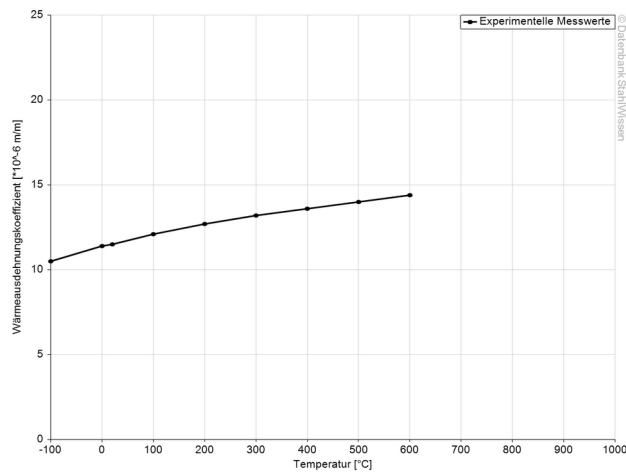


Heat treatment

	Temperature	Cooling	Hardness			
Soft annealing	1310 - 1382°F	Furnace	max. 229 BHN			
Stress reliefannealing	approx. 1202°F	Furnace				
	Temperature	Quenching in	Hardness after quenching			
Hardening	1598 - 1652°F	Oil, hotbasin (356 - 428°F)	60 HRC			
	212°F	392°F	572°F	752°F	932°F	1112°F
Tempering	60 HRC	58 HRC	56 HRC	52 HRC	48 HRC	43 HRC

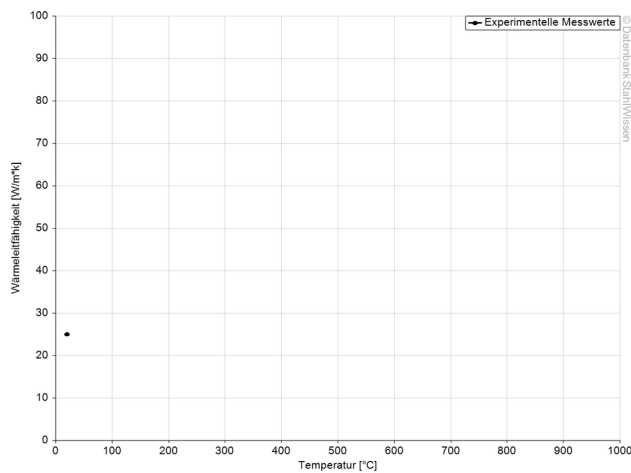
Thermal expansion coefficient diagram

Werkstoff: 60WCrV8, 1.2550



Thermal conductivity diagram

Werkstoff: 60WCrV8, 1.2550



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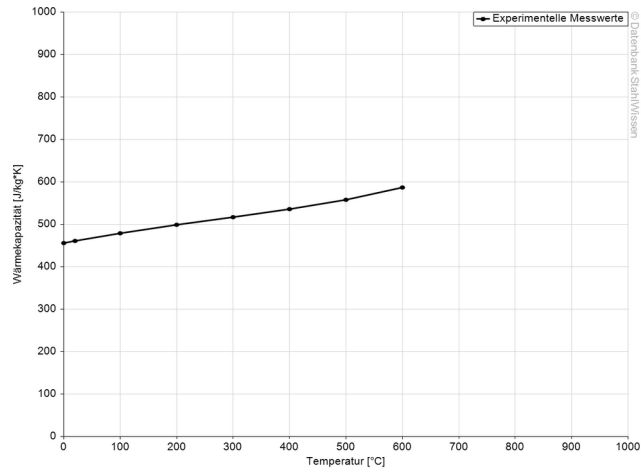
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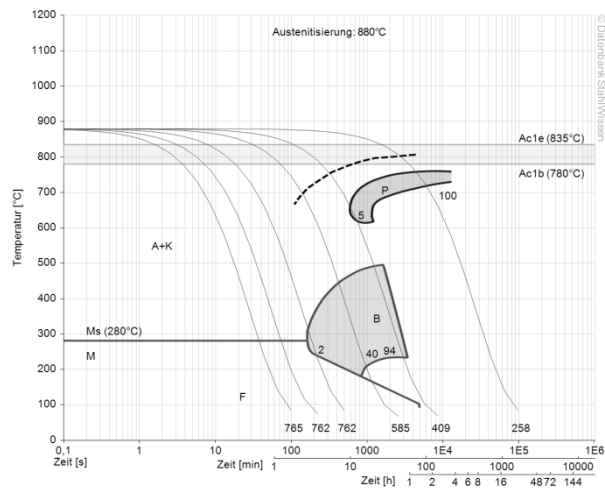
Thermal capacity diagram

Werkstoff: 60WCrV8, 1.2550

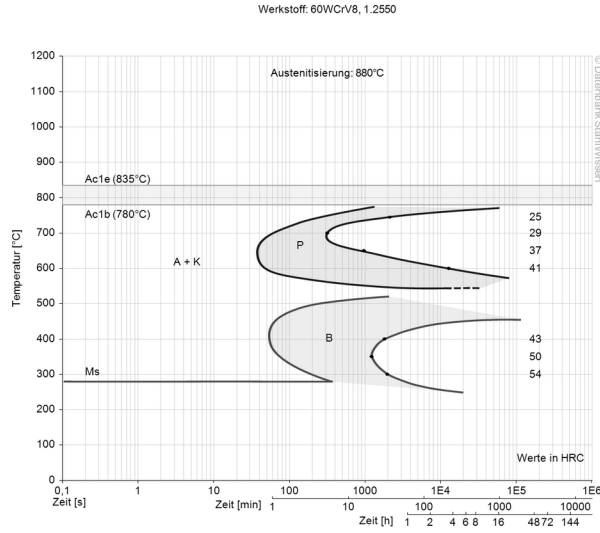


Continuous ZTU-diagram

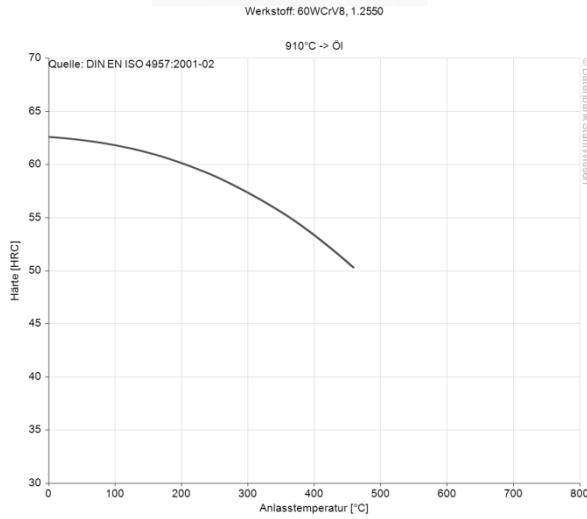
Werkstoff: 60WCrV8, 1.2550



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

