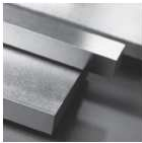


Steel grade

Material No.	PREMIUM 5115
AISI	5115
Search for alternatives in the ABRAMS STEEL GUIDE	www.abrams-steelguide.com/alternatives/5115

Shapes



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



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

Chemical composition AISI 5115 (reference value %)

C	Si	Mn	P	S	Cr
0.14 - 0.19	0 - 0.4	1.0 - 1.3	0 - 0.025	0 - 0.035	0.8 - 1.1

Physical properties

Hardness (delivery condition)	max. 217 HB, annealed				
Tensile strength R_m (as received condition)	approx. 104.4 KSI				
Working hardness	max. 60 HRC (surface hardness)				
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F	
	11.5	12.5	13.3	13.9	
Thermal conductivity $W/(m \cdot K)$	68°C				
	44.0				

Technical properties

Cold work and plastic mold steel (group of case hardening steel) with the objective of high surface hardness with core toughness. Excellent machinability, good cold hobbing and polishing properties. The tensile strength is a result of the combination of hardened surface and tough core.

Applications

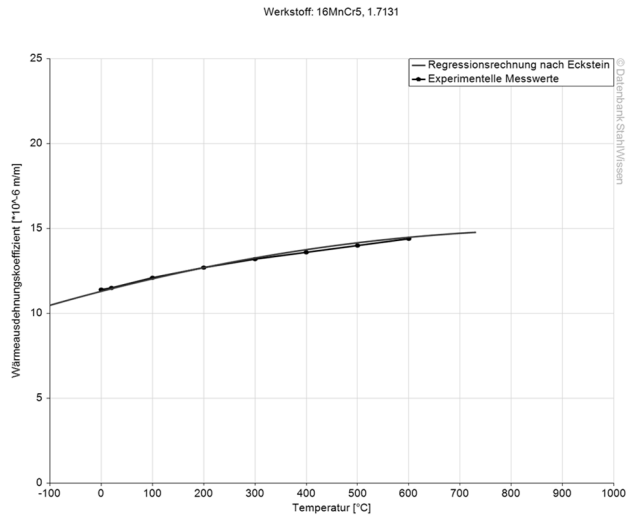
Mechanical engineering, jig construction, plant engineering, apparatus engineering, plastic processing, plastic molds, synthetic resin molds, base plates, bending bars, guide columns, gear parts, joint parts, shafts, gears, rods, bevel gears, crown wheels, piston pins, camshafts, bolts, pins, cardan joints.

Heat treatment

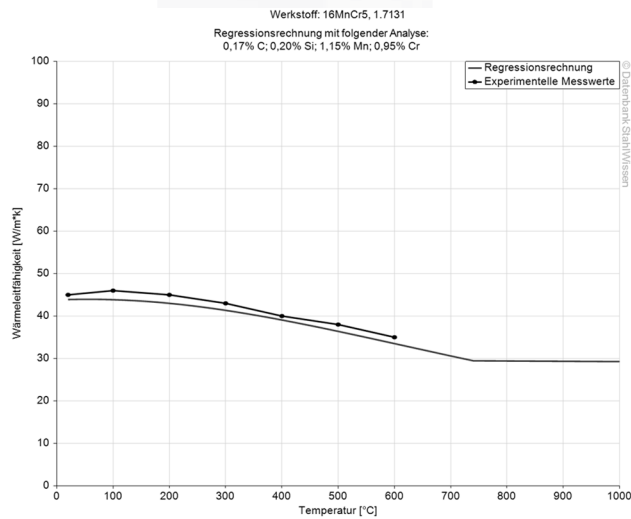
	Temperature	Cooling	Hardness
Soft annealing	1202 - 1292°F	Furnace	max. 217 HB
	Temperature	Quenching in	
Hardening			
Core hardening	1580 - 1652°F	Oil, hotbasin (320 - 482°F)	
Surface hardening	1436 - 1508°F	Oil, hotbasin (320 - 482°F)	
	Temperature	Cooling	
Tempering	302 - 392°F	Air	



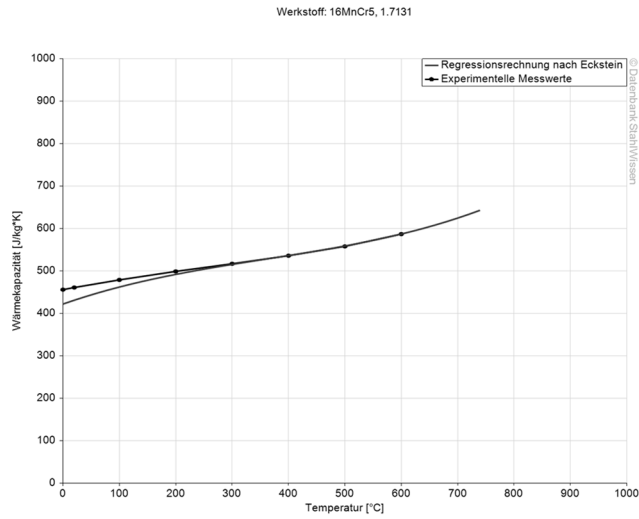
Thermal expansion coefficient diagram



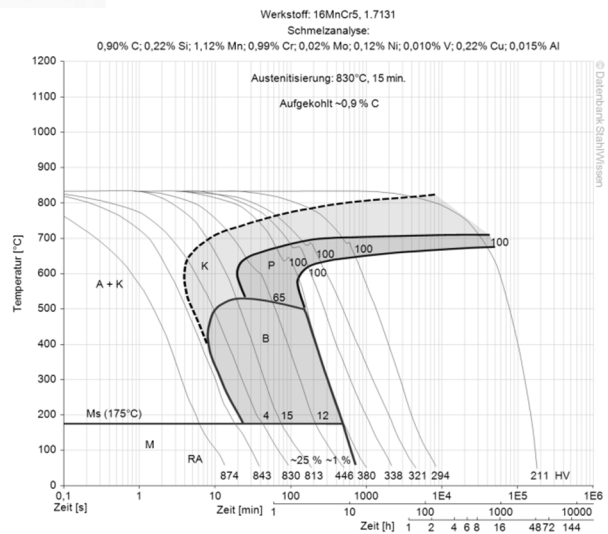
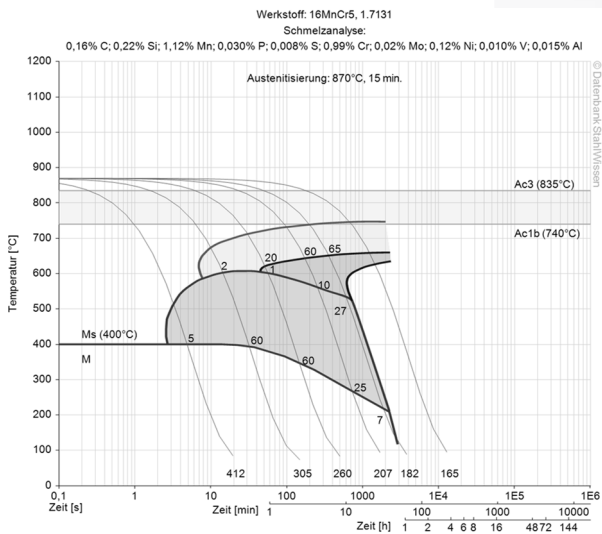
Thermal conductivity diagram



Thermal capacity diagram

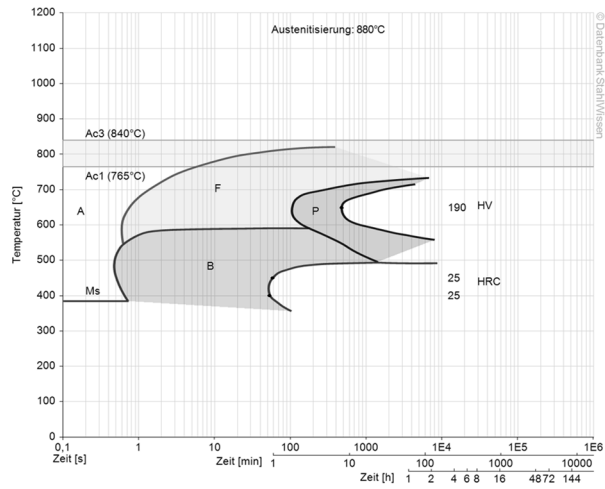


Continuous ZTU-diagrams



Isothermal ZTU-diagram

Werkstoff: 16MnCr5, 1.7131



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

