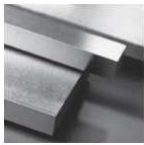


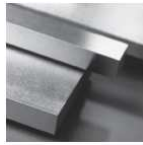
Steel grade

Material No.	PREMIUM 4140 / 4142 PH
AISI	4140 PH / 4142 PH
Search for alternatives in the ABRAMS STEEL GUIDE	www.abrams-steelguide.com/alternatives/4140PH

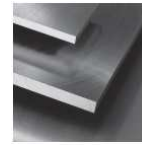
Shapes



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



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



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] Oversize Round Bars
L: 18"
L: 36"

Chemical composition AISI 4140 PH (reference value %)

C	Si	Mn	P	S	Cr	Mo
0.38 - 0.45	0 - 0.4	0.6 - 0.9	0 - 0.035	0 - 0.035	0.9 - 1.2	0.15 - 0.3

Physical properties

Hardness (delivery condition)	max. 380 HB, tempered					
Tensile strength R_m (as received condition)	approx. 188.5 KSI					
Working hardness	max. 48 HRC					
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F		
	11.1	12.1	12.9	13.5		
Thermal conductivity $W/(m \cdot K)$	68°F					
	42.6					

Technical properties

Heat treatable steel (tempered condition) that can be used for a wide range of applications with a high degree of strength and toughness. Often used for demanding applications in automotive engineering. In quenched and tempered condition it is used in machine construction.

Applications

Mechanical engineering, machine parts, axes, knuckles, connecting rods, crankshafts, gear shafts, pinions, gears, bandages, base plates, assembling parts.

Heat treatment

Soft annealing	Temperature	Cooling	Hardness
	1256 - 1328°F	Furnace	max. 380 HB
Hardening	Temperature	Quenching in	
	1526 - 1616°F	Oil/water	

ABRAMS INDUSTRIES

ABRAMS PREMIUM STEEL

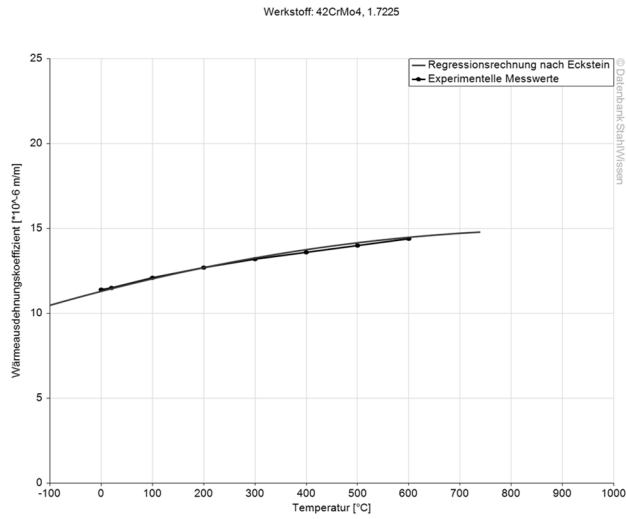
ABRAMS PREMIUM ALUMINUM

ABRAMS STEEL GUIDE

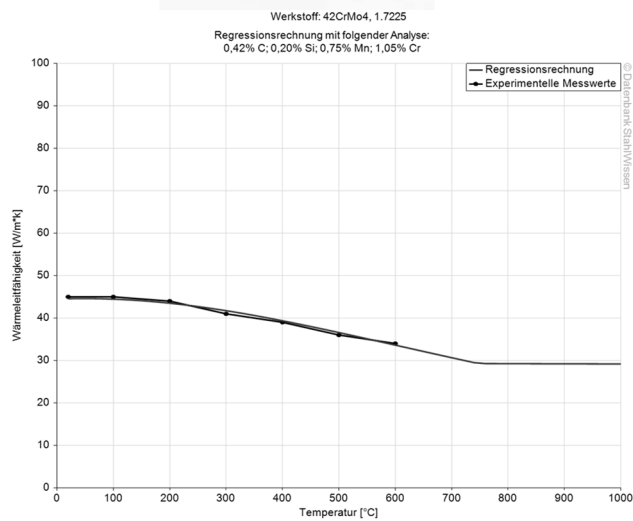
ABRAMS ART PROJECTS



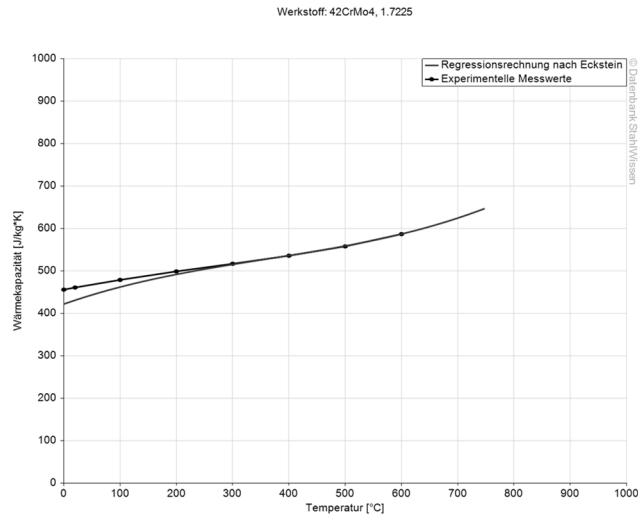
Thermal expansion coefficient diagram



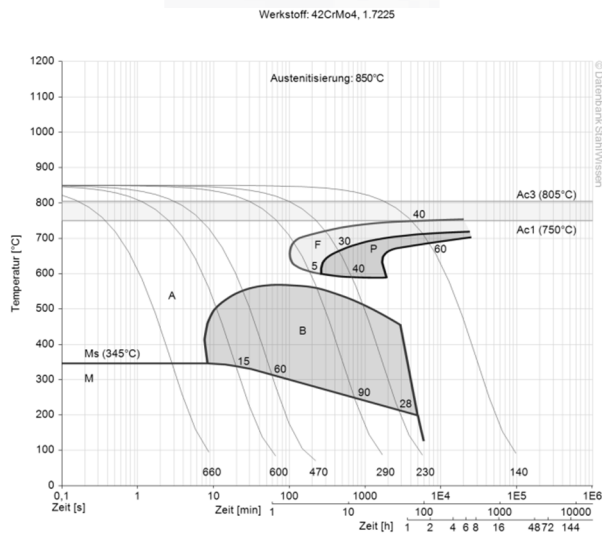
Thermal conductivity diagram



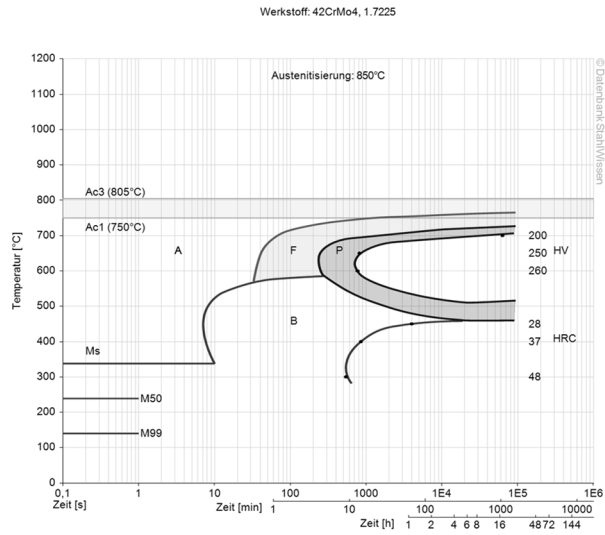
Thermal capacity diagram



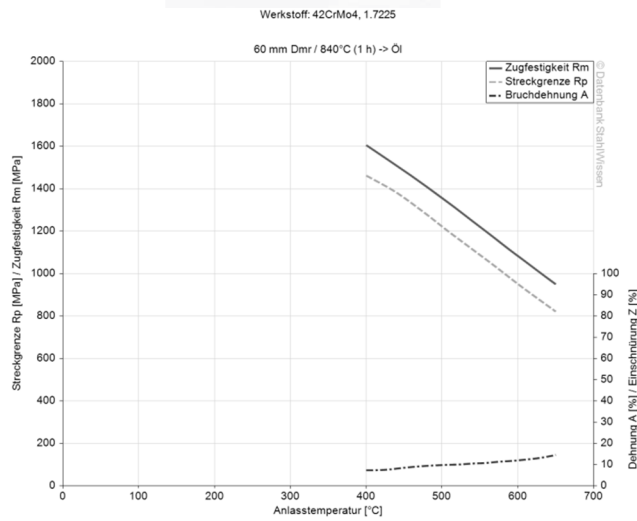
Continuous ZTU-diagram



Isothermal ZTU-diagram



Hardening and 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

