

Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.7225+QT
Description	42CrMo4
AISI/SAE	4140+QT
Search for alternatives in the ABRAMS STEEL GUIDE®	www.steel-guide.eu/alternatives/4140QT

Specifications



Round steel [RS]

black
L: 500 mm
L: 1.000 mm

Chemical composition AISI/SAE 4140+QT (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. 1.300 N/mm ²			
Working hardness	max. 48 HRC			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C
	11,1	12,1	12,9	13,5
Thermal conductivity $W/(m \cdot K)$	20 °C			
	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

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

Heat treatment

Soft annealing	Temperature	Cooling	Hardness
	680 - 720°C	Furnace	max. 380 HB
Hardening	Temperature	Quenching in	
	830 - 880°C	Oil or water	

ABRAMS PREMIUM STEEL

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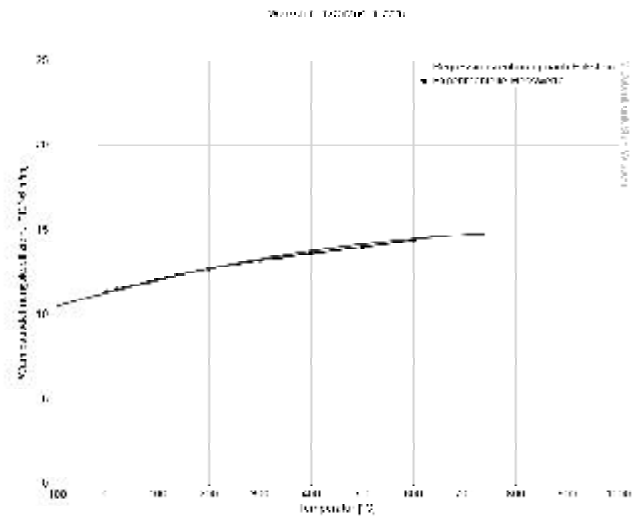
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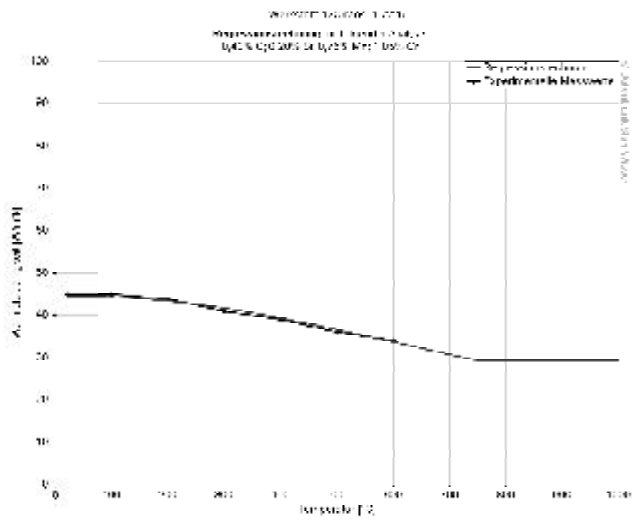
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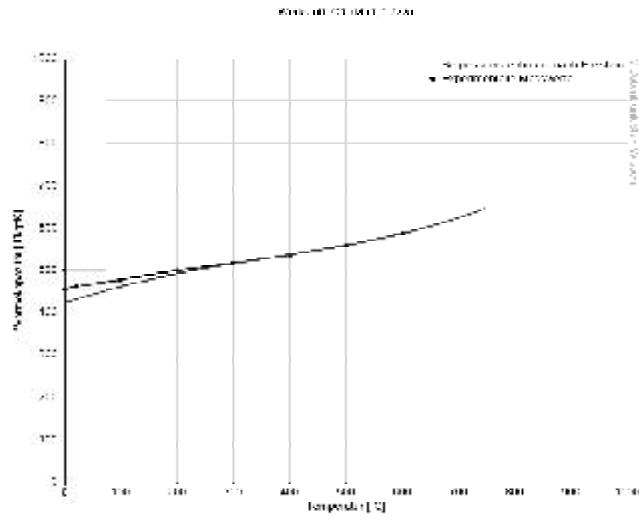
Thermal expansion coefficient diagram



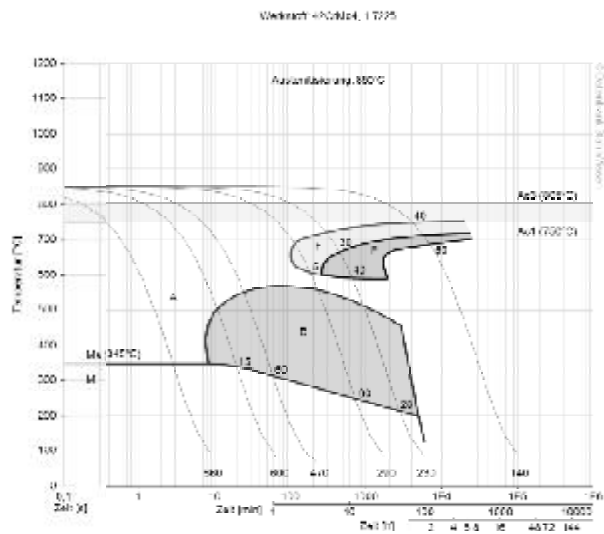
Thermal conductivity diagram



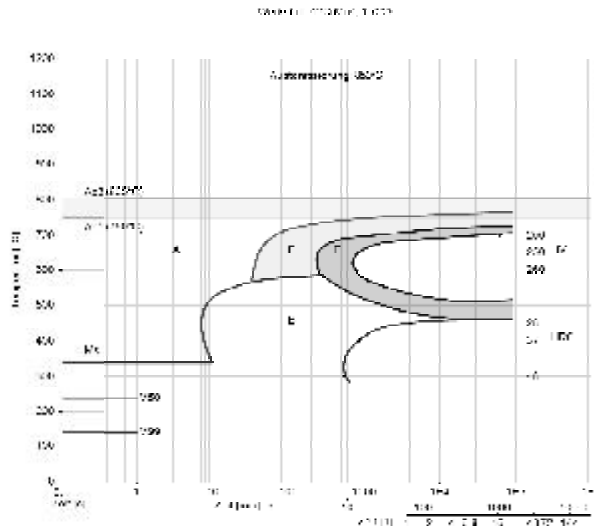
Thermal capacity diagram



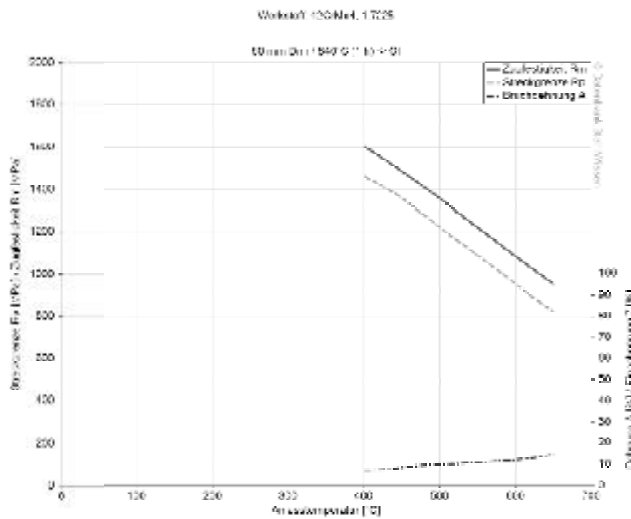
Continuous ZTU-diagram



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
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