Steel grade

Material No.	PREMIUM L3
AISI	L3; T61203
Search for alternatives in the ABRAMS STEEL GUIDE	**www.abrams-steelguide.com/alternatives/L3**

Shapes

$mart Flat Stock [$mart]
Standardized Precision Blanks
L: 12"
L: 24"

$mart Flat Stock Metric [$martM]
Standardized Precision Blanks Metric
L: 300 mm
L: 600 mm

Chemical composition AISI L3 (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni
0.95 -1.1	0.15 - 0.35	0.2 - 0.4	0 - 0.025	0 - 0.025	1.35 - 1.6	0 - 0.1	0 - 0.4

Physical properties

Hardness (delivery condition)	max. 223 HB, annealed			
Tensile strength R_m (as received condition)	approx. 108.7 KSI			
Working hardness	max. 64 HRC			
Thermal expansion coefficient 10^{-6}m/(m • K)	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F
	12.3	13.4	13.7	14.1
Thermal conductivity W/(m • K)	68°F	662°F	1292°F	
	33.0	32.2	31.4	

Technical properties

An all purpose medium alloyed cold work steel with high hardenability, but low depth of hardening, good wear resistance and toughness. This steel grade belongs to the group of AISI L1 (roller bearing and ball bearing steel).

Applications

Drills, threading tools, centre lathes, milling cutters, reamers, small die plates, pressure rollers, cold rollings, measuring tools, cold pilger rollings, cold pilger jaws, gauges, mandrels, woodworking tools, cold extrusion tools, flanging rollers, shear knives, roller bearings, ball bearings (medium to large size).

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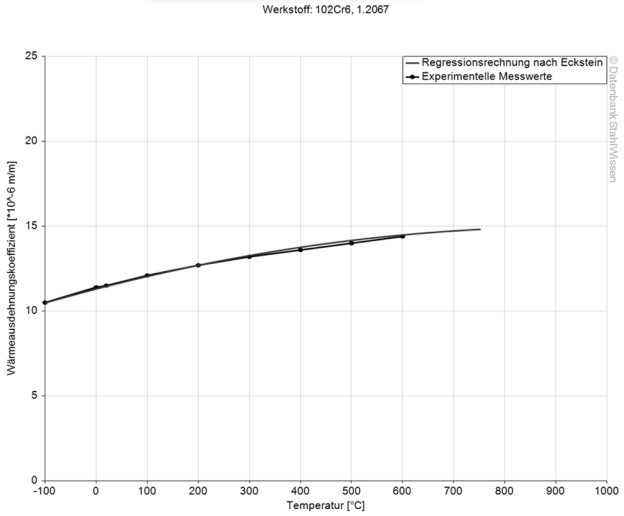
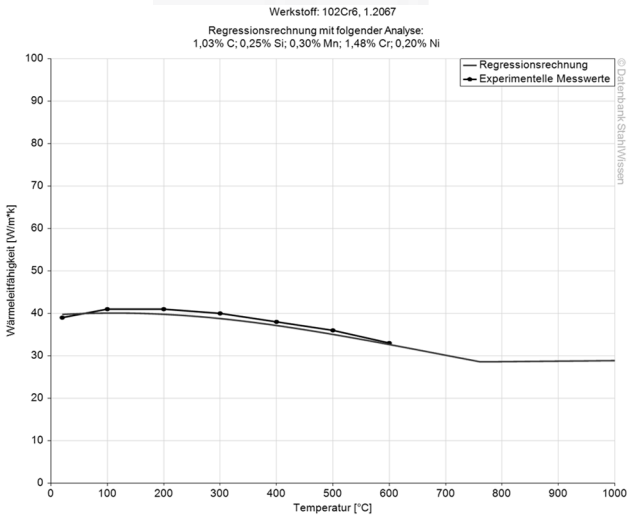
Heat treatment

Soft annealing	**Temperature**		**Cooling**		**Hardness**	
	1310 - 1382°F		Furnace		max. 223 HB	
Stress relief annealing	**Temperature**		**Cooling**			
	approx. 1202°F		Furnace			
Hardening	**Temperature**		**Quenching in**		**Hardness after quenching**	
	1526 - 1580°F		Oil, basin, 356 - 428°F		64 HRC	
Tempering	212°F	392°F	572°F	752°F	932°F	1112°F
	64 HRC	61 HRC	56 HRC	50HRC	44 HRC	36 HRC

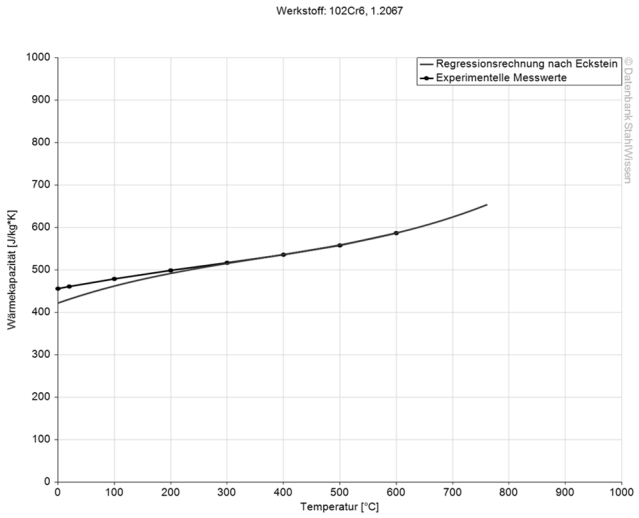
Thermal expansion coefficient diagram



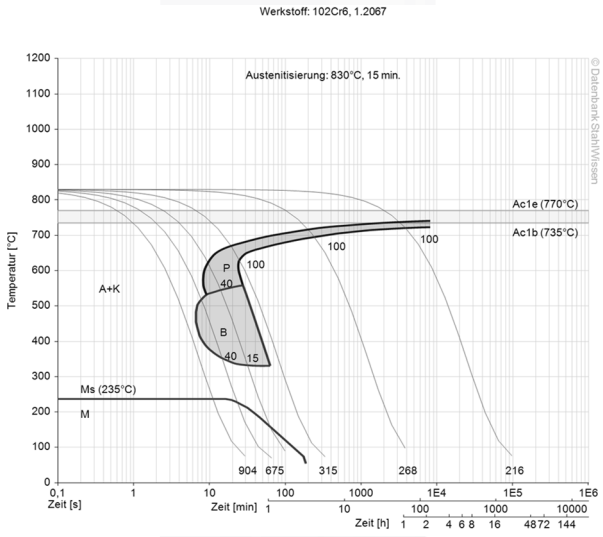
Thermal conductivity diagram



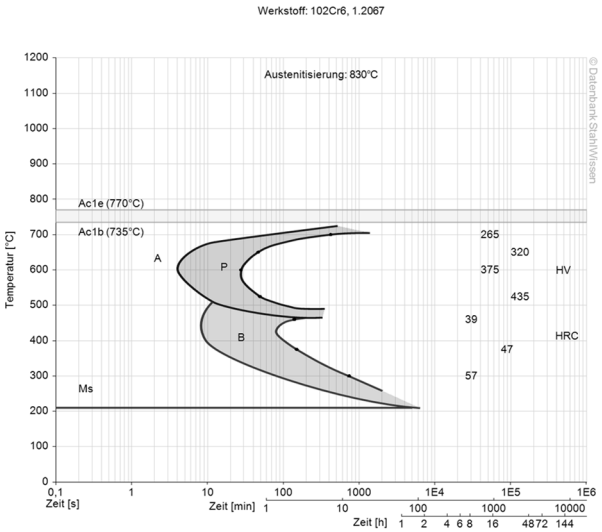
Thermal capacity diagram



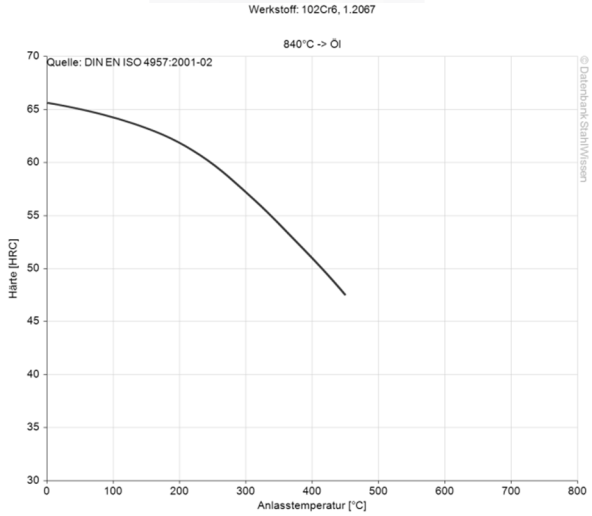
Continuous ZTU-diagram



Isothermical ZTU-diagram



Tempering diagram



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