

Steel grade

Material No.	PREMIUM HSS M2
AISI	M2; T11302
Search for alternatives in the ABRAMS STEEL GUIDE	www.abrams-steelguide.com/alternatives/M2

Shapes



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



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



**Drill Rod (DR)
Precision Round Bars**
L: 36"

Chemical composition AISI M2 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V	W
0.86 - 0.94	0 - 0.45	0 - 0.4	0 - 0.03	0 - 0.03	3.8 - 4.5	4.7 - 5.2	1.7 - 2.1	5.9 - 6.7

Physical properties

Hardness (delivery condition)	max. 270 HB, annealed			
Tensile strength R_m (as received condition)	approx. 133.4 KSI			
Working hardness	max. 65 HRC			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	68 - 212°F	68 - 392°F	68 - 572°F	68 - 752°F
	10.8	11.8	12.0	12.5
Thermal conductivity $W/(m \cdot K)$	68°F	662°F	1292°F	
	32.8	23.5	25.5	

Technical properties

This high speed steel is the most frequently used among the high speed steels. Its composition allows it to be used for a wide range of applications. High impact toughness, good compression strength, excellent wear resistance.

Applications

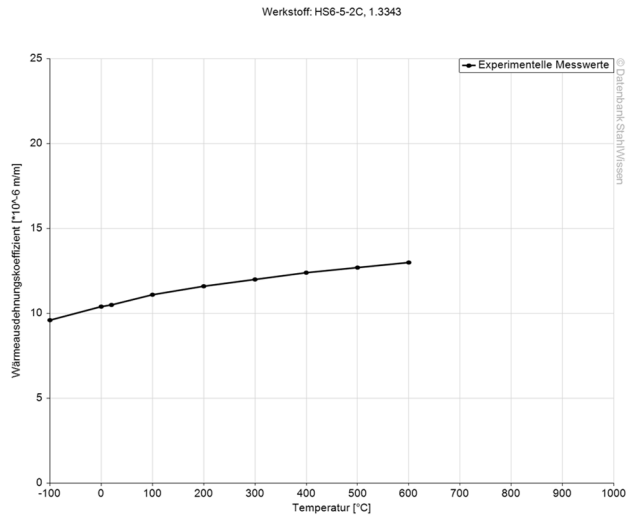
Machining tools, milling cutters, twist drills, screw taps, reamers, broaching tools, rotary knives, planer knives, gear shaper cutters, circular saw segments, metal saws, woodworking tools, screw dies, countersinks, chasers, cold extrusion punches, precision cutting tools, dies, punches, plastic molds with high wear resistance.

Heat treatment

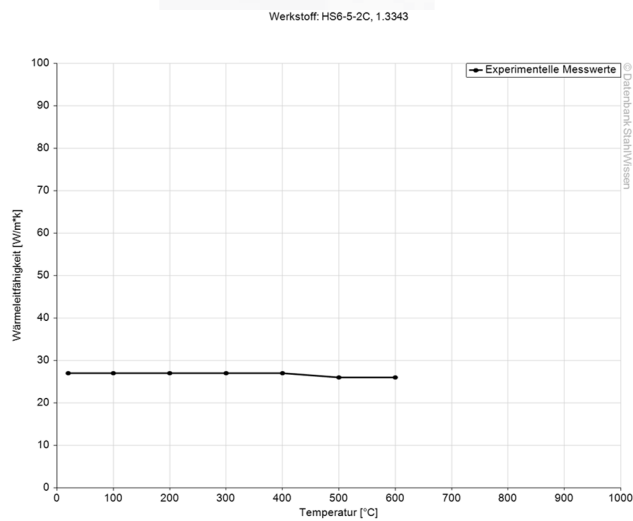
	Temperature	Cooling	Hardness
Soft annealing	1418 - 1580°F	Furnace	max. 270 HB
	Temperature	Cooling	
Stress relief annealing	1166 - 1202°F	Furnace	
	Temperature	Quenching in	Hardness after tempering
Hardening	2174 - 2246°F	Oil, hot basin (1022°F), compressed gas (N ₂)	64 - 66 HRC
Tempering (min. 2 times tempering)	986 - 1040°F		



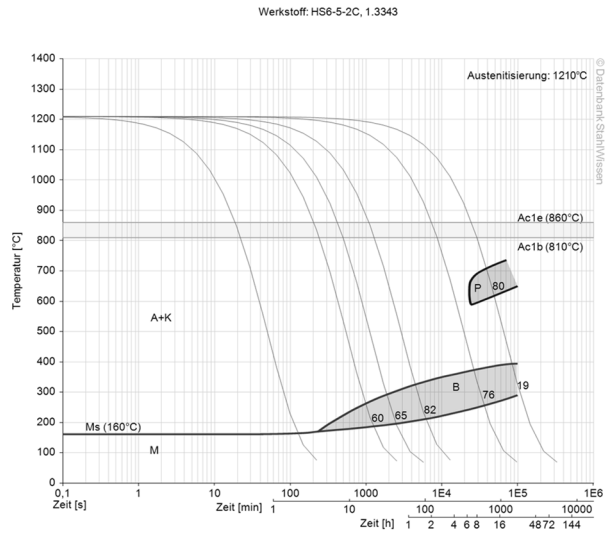
Thermal expansion coefficient diagram



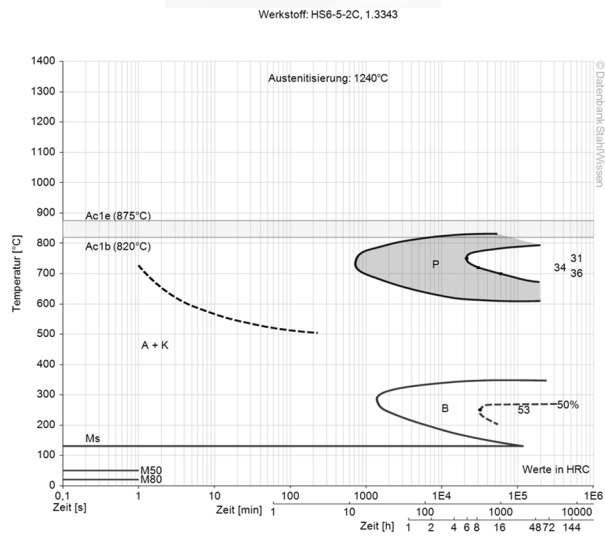
Thermal conductivity diagram



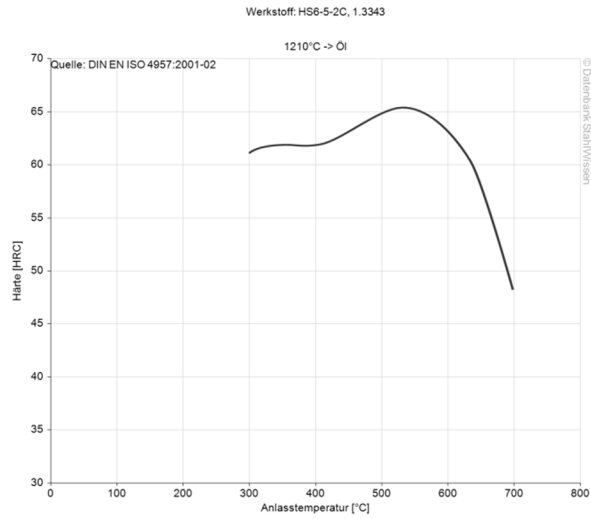
Continuous ZTU-diagram



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.
Diagramm erstellt von Datenbank StahlWissen Dr. Sommer Werkstofftechnik
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