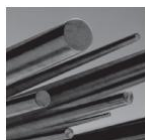


Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.8519
Description	31CrMoV9
AISI/SAE	1.8519
Search for alternatives in the ABRAMS STEEL GUIDE*	www.steel-guide.eu/alternatives/1.8519

Specifications



Round steel [RS]
black
L: 500 mm
L: 1.000 mm

Chemical composition AISI/SAE 1.8519 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V
0,27 - 0,34	0 - 0,4	0,4 - 0,7	0 - 0,025	0 - 0,035	2,3 - 2,7	0,15 - 0,25	0,10 - 0,25

Physical properties

Hardness (delivery condition)	max. 352 HB, tempered			
Tensile strength R_m (as received condition)	approx. 1100 N/mm ²			
Working hardness	max. 64 HRC (nitriding hardness)			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C
	12,1	12,7	13,2	13,6
Thermal conductivity $W/(m \cdot K)$	20°C			
	25,7			

Technical properties

CrMoV alloyed nitriding steel (tempered condition), which is used for automotive engineering and propulsion techniques due to its high wear resistance.

Applications

Automotive industry, drive technology, mechanical engineering, valve construction, plant engineering, engine and piston construction.

Heat treatment

	Temperature	Cooling	Hardness
Soft annealing	680 - 720°C	Furnace	max. 248 HB
Annealing	Temperature	Cooling	
	870 - 900°C	Air	
Hardening	Temperature	Quenching in	
	840 - 880°C	Oil, water	

ABRAMS PREMIUM STEEL

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Abrams Engineering Services GmbH & Co. KG
Hannoversche Str. 38 · 49084 Osnabrueck / Germany
Managing Director: Dipl.-Wi.-Ing. Dr. Juergen Abrams

Amtsgericht Osnabrueck / Germany, HRA 6865
VAT-No.: DE 221940667
General Partner: Abrams Engineering Verwaltungs GmbH
Amtsgericht Osnabrueck / Germany, HRB 20019

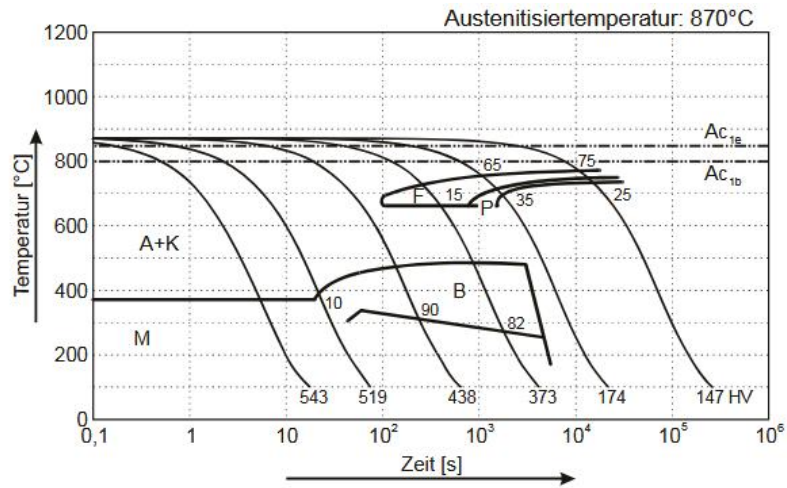
T: +49 (0) 5 41/3 57 39-0
F: +49 (0) 5 41/3 57 39-39

sales@premium-steel.eu
www.premium-steel.eu
www.shop.premium-steel.eu
www.steel-guide.eu

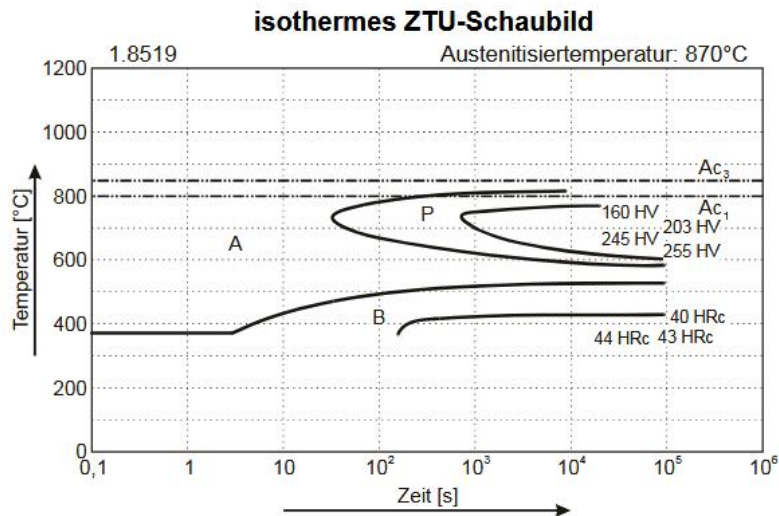
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Continuous ZTU-diagram



Isothermal ZTU-diagram



Tempering diagram

