Material No.: Code:

1.8519 31CrMoV9

Chemical composition:
(Typical analysis in %)

C	Cr	Mo	V				
0,31	2,50	0,20	0,15				

Steel properties:

CrMoV-alloyed nitriding steel with a surface hardness after nitriding of minimum 800 HV.

Applications:

Spindles loaded up to highest pressure, screws, controlling parts, bolts, crankshafts.

Condition of delivery:

Quenched and tempered

Physical properties:

Thermal expansion coefficient	$\left[\frac{10^{-6} \cdot m}{m \cdot K}\right]$	20-100°C	20-200°C	20-300°C	20-400°C
		12,1	12,7	13,2	13,6
Thermal conductivity	$\left[\frac{W}{m \cdot K}\right]$	20°C			
		25,7			

Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
680 - 720°C	furnace	max. 248 HB

Stress relief annealing

Temperature	Cooling	
870 - 900°C	air	

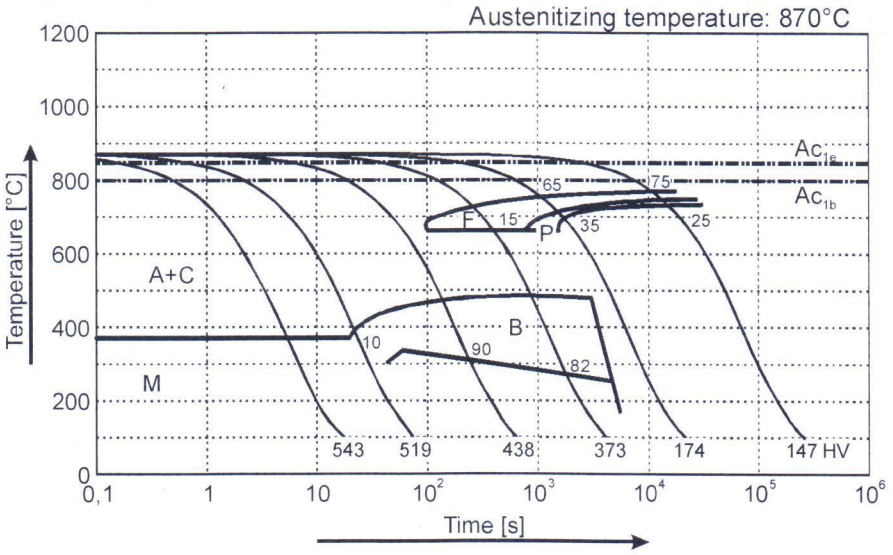
Hardening

Temperature	Cooling	Tempering
840 - 880°C	oil, water	see tempering diagram

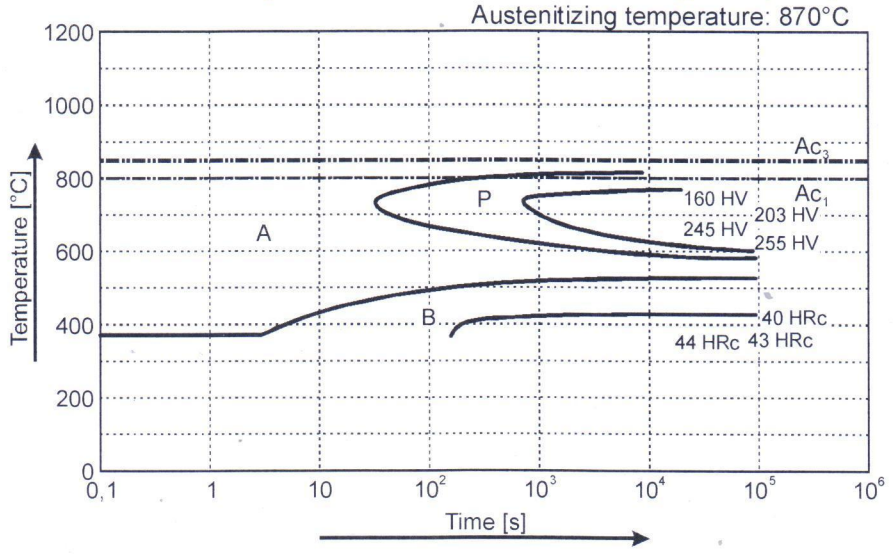
Mechanical properties in quenched and tempered condition (DIN EN 10085, 07/2001)

Diameter [mm]	16 ≤ d ≤ 40	40 ≤ d ≤ 100	100≤ d ≤ 160	160 ≤ d ≤ 250
Yield strength Re [N/mm²]	min. 900	min. 800	min. 700	min. 650
Tensile strength Rm [N/mm²]	1100 - 1300	1000 - 1200	900 - 1100	850 - 1050
Elongation A [%]	min. 9	min. 10	min. 11	min. 12
Toughness CVN [J]	min. 25	min. 30	min. 35	min. 40

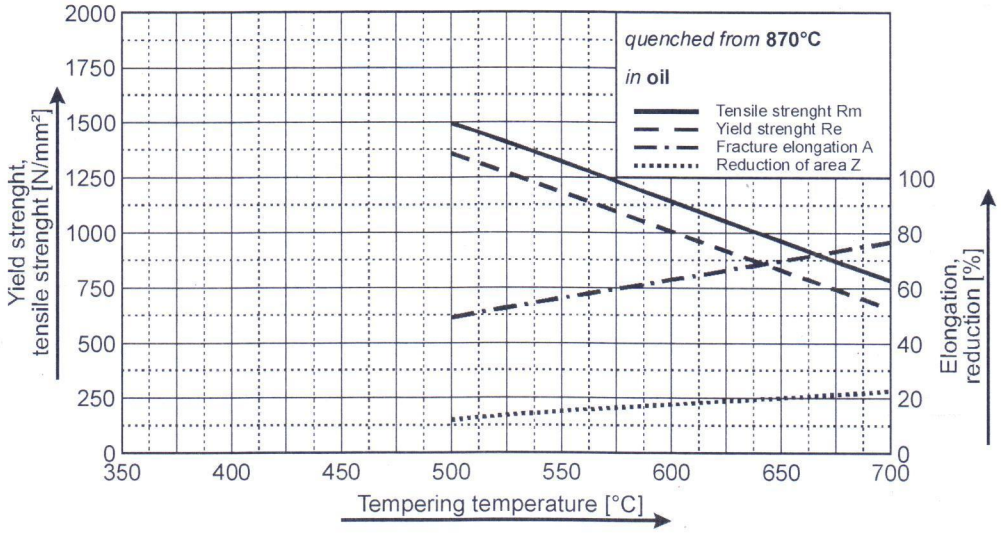
(1.8519) Continuous Cooling Transformation Diagram (CCT)



Time Temperature Transformation Diagram (TTT)



Tempering Diagram



Remarks: All technical information is for reference only.

www.unisontek.com.tw
info@unisontek.com.tw