

Material No.: Code:

**1.2631 X50CrMoW9-1-1**

DE - Brand:

**WR Spezial**

**Chemical composition:**  
(Typical analysis in %)

C	Cr	Mo	W				
0,50	8,50	1,20	1,20				

**Steel properties:**

Medium alloyed cold work steel, good through-hardening, high wear resistance, very good toughness.

**Applications:**

Wood cutting knives, flat and round shear knives, knives for the paper industry.

**Condition of delivery:**

Soft annealed to max. 240 HB

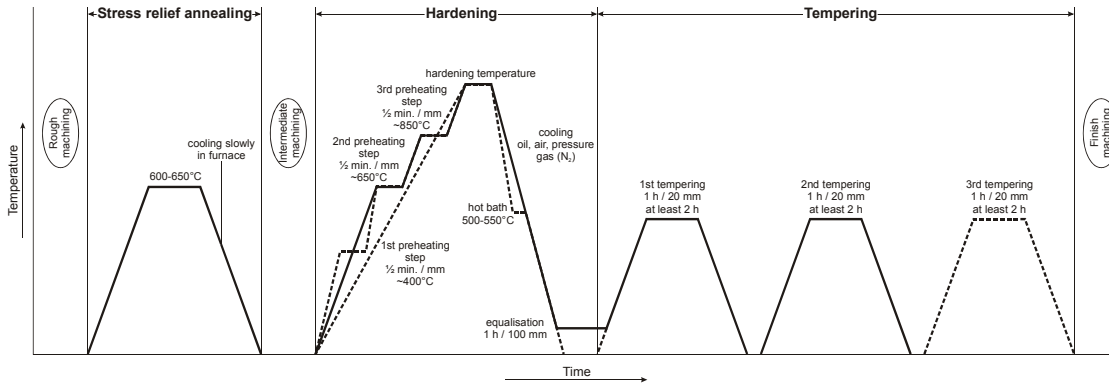
**Physical properties:**

Thermal expansion coefficient	$\left[ \frac{10^{-6} \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$	20-100°C	20-200°C	20-300°C	20-400°C
		10,5	10,8	11,4	11,8
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	350°C		
		24,3	26,9		

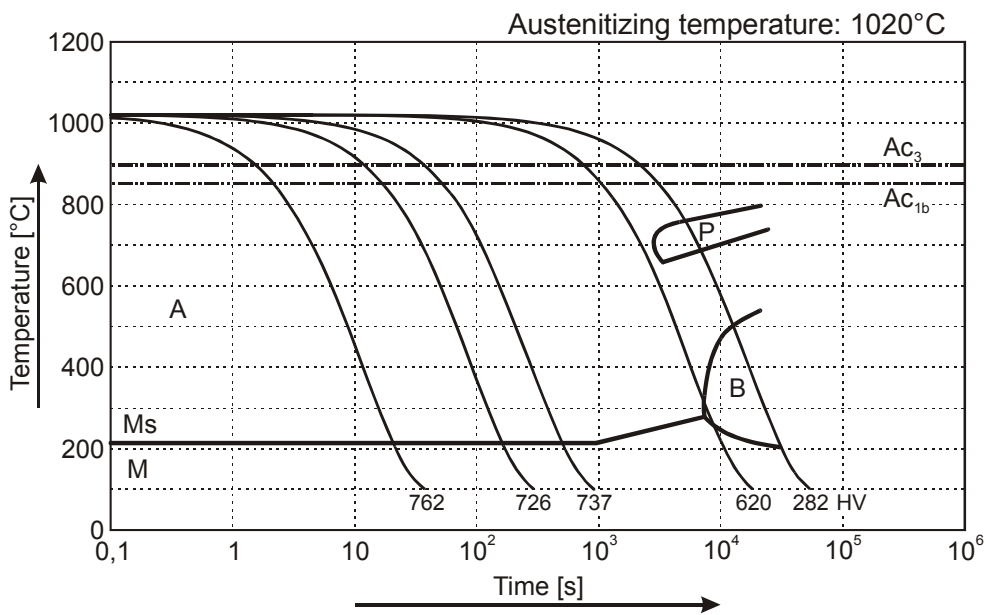
**Heat treatment:**

Soft annealing	<b>Temperature</b>	<b>Cooling</b>	<b>Hardness</b>
	820 - 870°C	furnace	max. 240 HB
Stress relief annealing	<b>Temperature</b>	<b>Cooling</b>	
	600 - 650°C	furnace	
Hardening	<b>Temperature</b>	<b>Cooling</b>	<b>Tempering</b>
	1020 - 1050°C	oil, pressure gas (N <sub>2</sub> ), air or hot bath 500 - 550°C	see tempering diagram

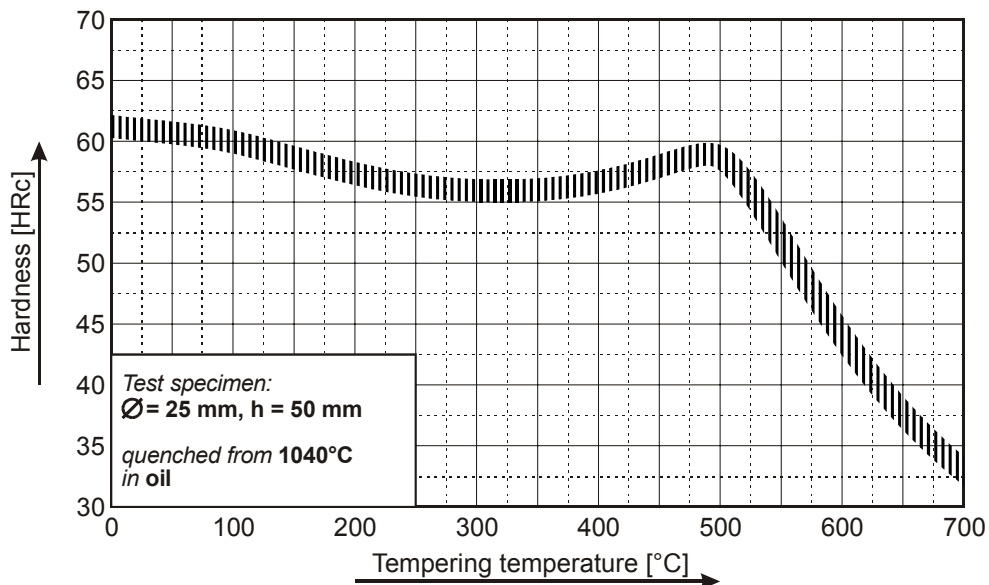
# (1.2631) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.