

Material No.: Code:  
**1.2210 115CrV3**

DE - Brand:  
**PV4**

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

C	Cr	V					
1,20	0,70	0,10					

**Steel properties:**

Wear resistant Cr-V-alloyed tool steel. Similar to AISI L2.

**Applications:**

Cutting and punching tools, thread rolling tools, twist drills, ejector pins.

**Condition of delivery:**

Soft annealed to max. 220 HB

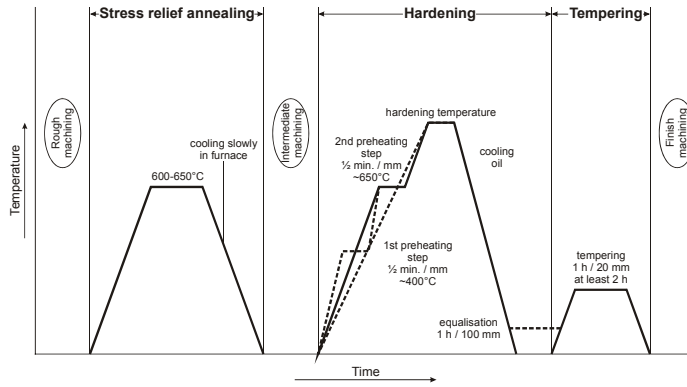
**Physical properties:**

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
		11,8	12,5	12,9	13,5
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	350°C	700°C	
		33,5	32,0	31,0	

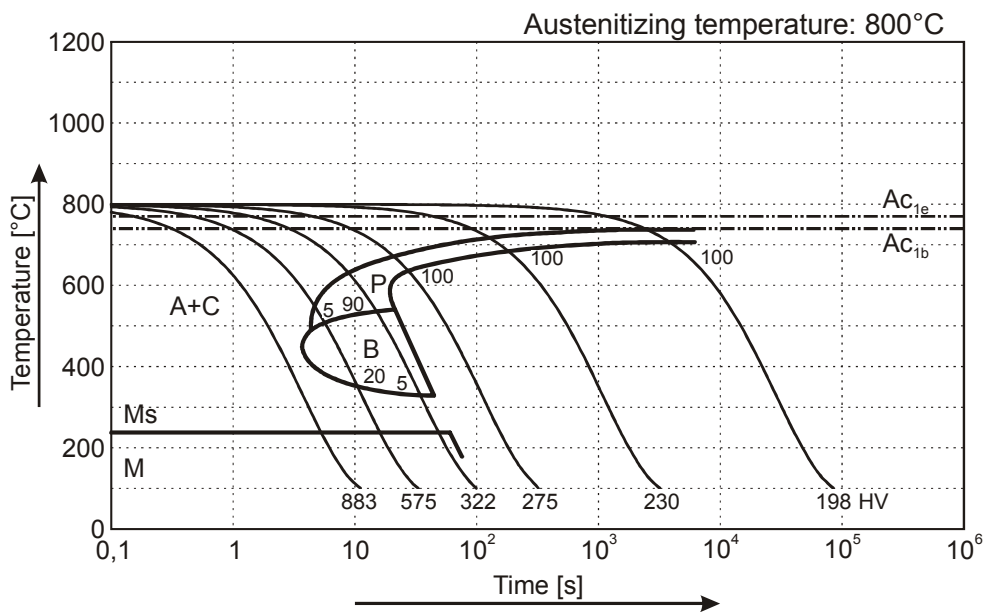
**Heat treatment:**

Soft annealing	<b>Temperature</b>	<b>Cooling</b>	<b>Hardness</b>
	710 - 750°C	furnace	max. 220 HB
Stress relief annealing	<b>Temperature</b>	<b>Cooling</b>	
	600 - 650°C	furnace	
Hardening	<b>Temperature</b>	<b>Cooling</b>	<b>Tempering</b>
	780 - 840	oil (water)	see tempering diagram

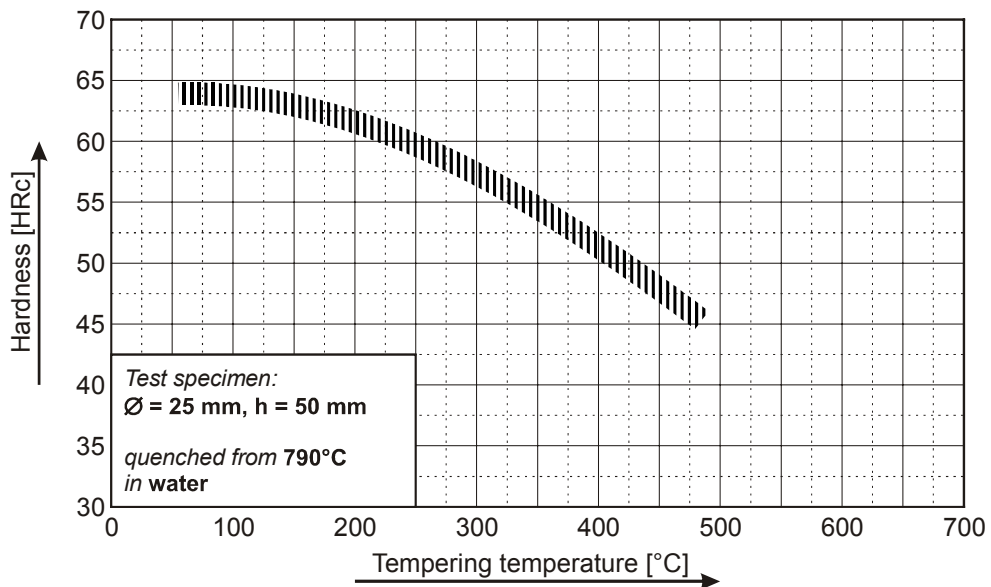
## (1.2210) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.