

# O1 TOOL STEEL (100MNCRW4)

O1 toolsteel is a medium alloyed cold work steel with good hardening capacity, high wear resistances, dimensionally stable during heat treatment.

Applications: Cutting and punching tools, shear knives, thread rolling tools, measuring instruments.

Colour Code	Stocked Sizes	
Blue/Green	Rounds	20 mm - 222 mm Dia
	<b>Condition of Delivery</b>	
	Soft annealed to max. 230 HB	

## Related Specifications

Germany	DIN 1.2510
USA	AISI O1

## Chemical Composition

	%
Carbon	0.95
Manganese	1.10
Chromium	0.60
Tungsten	0.60
Vanadium	0.10

## Physical Properties

Thermal expansion coefficient	$\left[ \frac{10^{-6} \text{ m}}{\text{m K}} \right]$	20-100°C	20-200°C	20-300°C	20-400°C
		12,0	12,6	13,1	13,5
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m K}} \right]$	20°C	350°C		
		33,4	32,1		

## Heat Treatment

### Soft Annealing

Temperature	740 - 770°C
Cooling	furnace
Hardness	max 230 HB

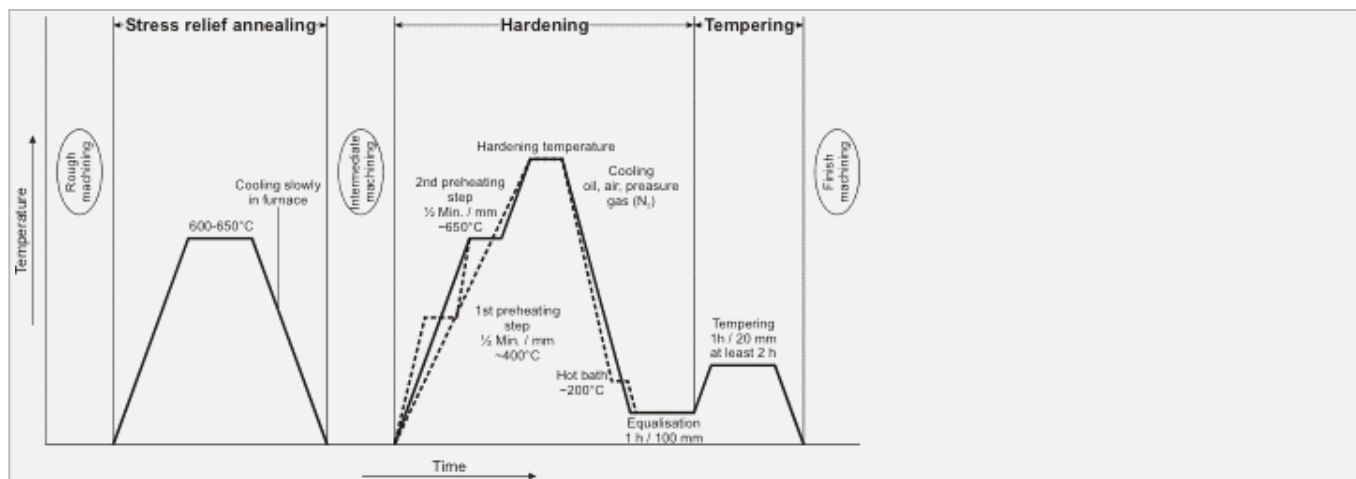
### Stress Relief Annealing

Temperature	600 - 650°C
Cooling	furnace

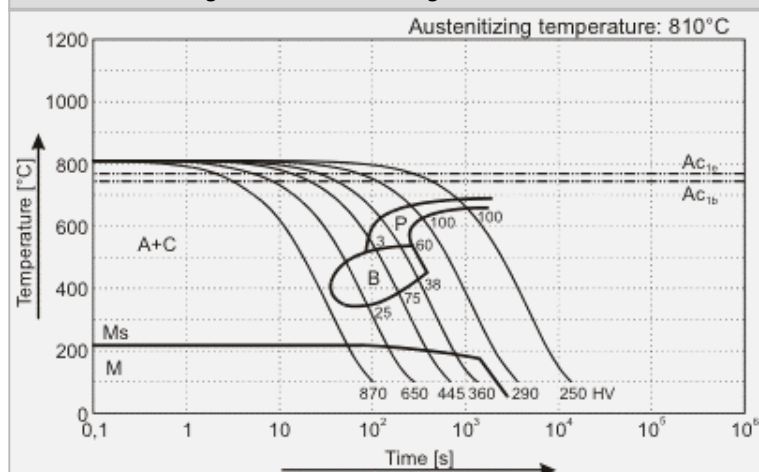
### Hardening

Temperature	790 - 820°C
Cooling	oil or hot bath 180 - 220°C
Hardness	see tempering diagram

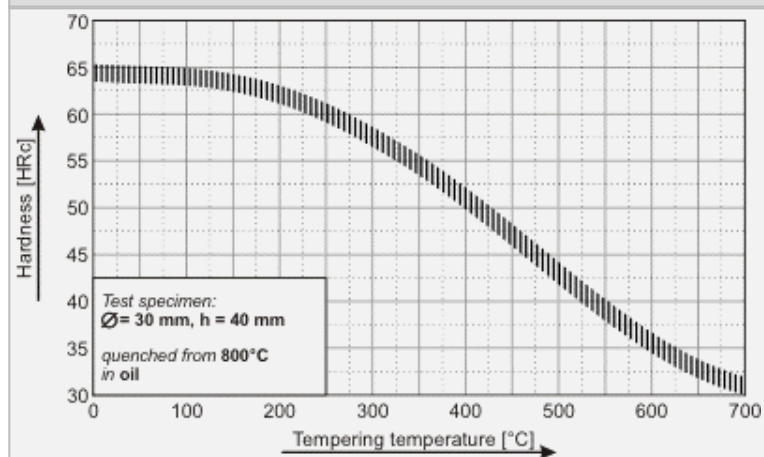
## Thermal Cycle Diagram



### Continuous Cooling Transformation Diagram (CCT)



### Tempering Diagram



Interlloy believes the information provided is accurate and reliable. However no warranty of accuracy, completeness or reliability is given, nor will any responsibility be taken for errors or omissions.