

Material No.: Code:

**1.8550 34CrAlNi7-10**

DE - Brand:

**Ni50**

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

C	Cr	Mo	Ni	Al			
0,34	1,70	0,20	1,00	1,00			

**Steel properties:**

CrAlNiMo-alloyed nitriding steel with a surface hardness after nitriding of minimum 950HV.

**Applications:**

Barrels and screws for injection moulding machines, plungers, piston rods, parts for general engineering.

**Condition of delivery:**

Quenched and tempered

**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
		12,1	12,7	13,2	13,7
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C			
		33,7			

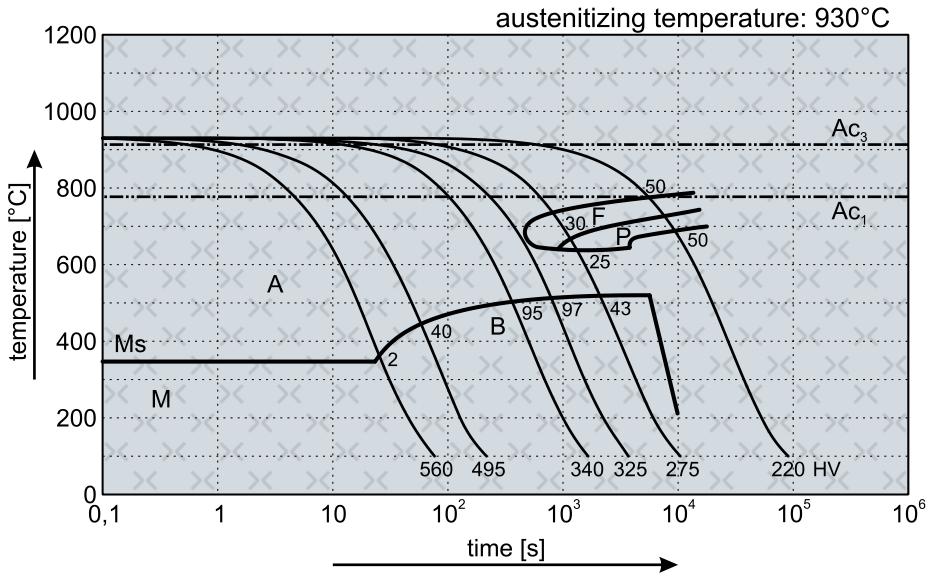
**Heat treatment:**

Soft annealing	<b>Temperature</b>	<b>Cooling</b>	<b>Hardness</b>
	650 - 700°C	furnace	max. 248 HB
Normalizing	<b>Temperature</b>	<b>Cooling</b>	
	860 - 900°C	furnace	
Hardening	<b>Temperature</b>	<b>Cooling</b>	<b>Tempering</b>
	870 - 930°C	oil, pressure gas (N <sub>2</sub> ), air or hot bath 500 - 550°C	see tempering diagram

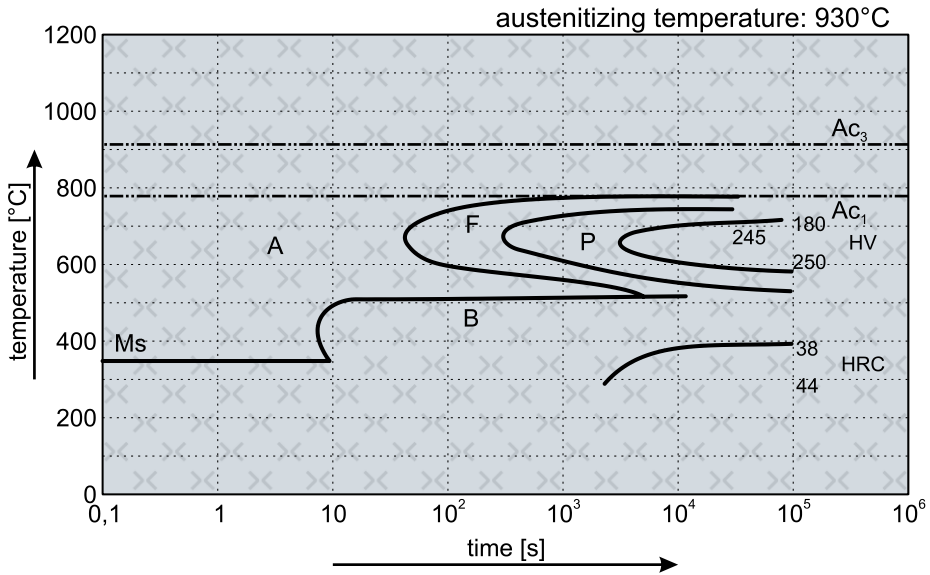
**Mechanical properties in quenched and tempered condition (DIN EN ISO 683-5:2021-08)**

<b>Diameter d [mm]</b>	<b>16 ≤ d ≤ 40</b>	<b>40 &lt; d ≤ 100</b>	<b>100 &lt; d ≤ 160</b>	<b>160 &lt; d ≤ 250</b>
<b>Yield strength R<sub>e</sub> [N/mm<sup>2</sup>]</b>	min. 680	min. 650	min. 600	min. 600
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	900 - 1100	850 - 1050	800 - 1000	800 - 1000
<b>Fracture elongation A [%]</b>	min. 10	min. 12	min. 13	min. 13
<b>Toughness CVN [J]</b>	min. 30	min. 30	min. 35	min. 35

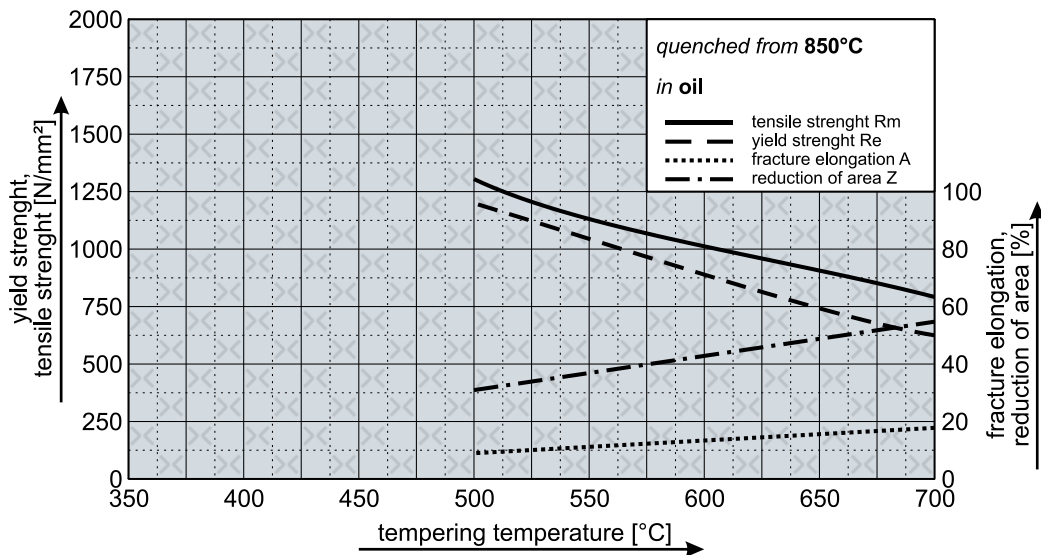
### (1.8550) Continuous Cooling Transformation Diagram (CCT)



### Time Temperature Transformation Diagram (TTT)



### Tempering Diagram



Remarks: All technical information is for reference only.