



Material No.: Code:  
**1.8550 34CrAlNi7**

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

Temperature	Cooling	Hardness
650 - 700°C	furnace	

Normalizing

Temperature	Cooling	
860 - 900°C	furnace	

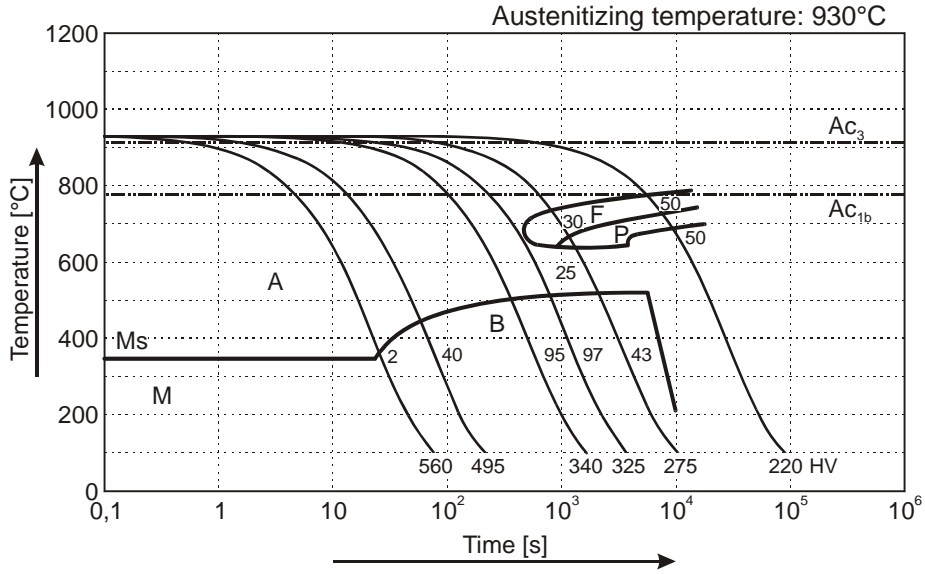
Hardening

Temperature	Cooling	Tempering
870 - 930°C	oil, pressure gas (N <sub>2</sub> ), air or hot bath 500 - 550°C	see tempering diagram

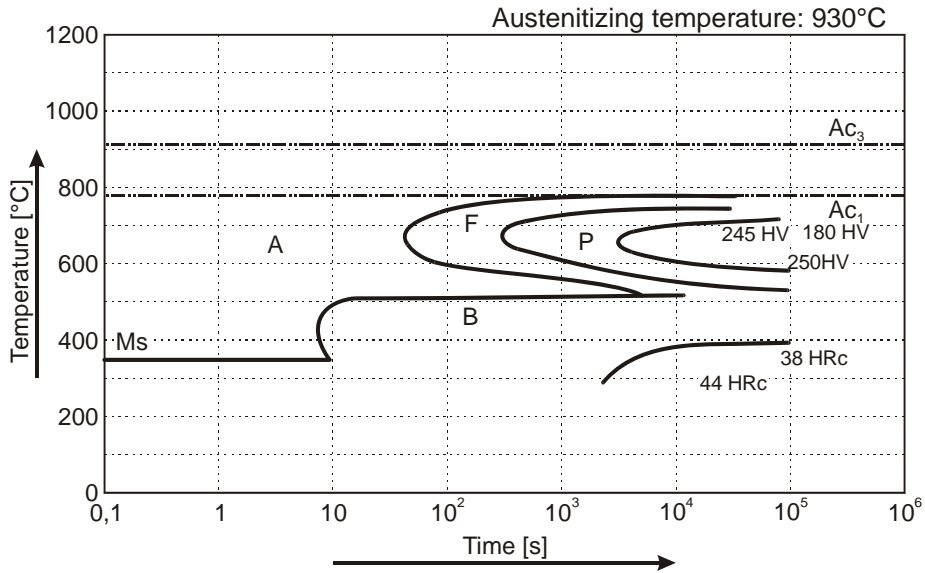
**Mechanical properties in quenched and tempered condition (DIN EN 10085:2001-07)**

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

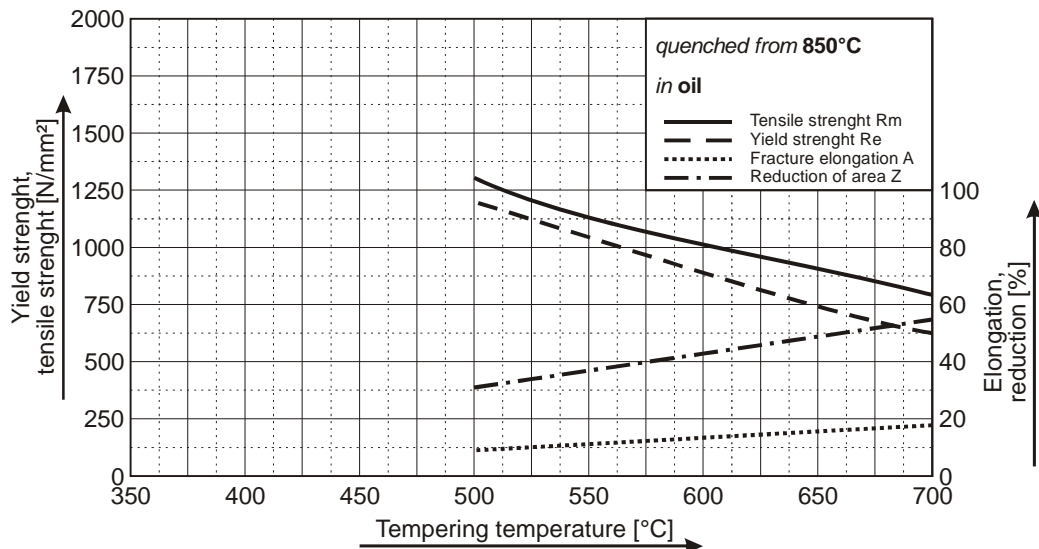
### (1.8550) Continuous Cooling Transformation Diagram (CCT)



### Time Temperature Transformation Diagram (TTT)



### Tempering Diagram



Remarks: All technical information is for reference only.