



Material No.: Code:  
**1.2358 60CrMoV18-5**

DE - Brand:  
**AMO**

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

|      |      |      |      |  |  |  |  |
|------|------|------|------|--|--|--|--|
| C    | Cr   | Mo   | V    |  |  |  |  |
| 0,60 | 4,50 | 0,50 | 0,20 |  |  |  |  |

**Steel properties:**

Medium alloyed cold work steel that is usually supplied hardened and tempered, high hardening capacity, through hardenability and toughness, good weldability, excellent surface hardenability.

**Applications:**

Cutting inserts for segmented tool, punching tools, shear knives, plastic moulds, cutting tools.

**Condition of delivery:**

- a) Soft annealed to max. 240 HB
- b) Quenched and tempered, 280 - 325 HB  
(950 - 1100 N/mm<sup>2</sup> according to DIN EN ISO 18265 Table A.1)

**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 |
|                               |   | 11,5     | 11,8     | 12,4     | 12,8     |
| Thermal conductivity          | $\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$               | 20°C     | 350°C    | 700°C    |          |
|                               |   | 19,4     | 24,6     | 26,3     |          |

**Heat treatment:**

Soft annealing

| Temperature | Cooling | Hardness    |
|-------------|---------|-------------|
| 820 - 860°C | furnace | max. 240 HB |

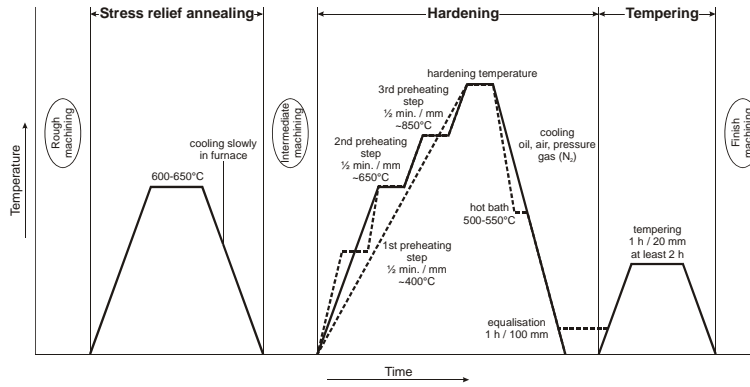
Stress relief annealing

| Temperature | Cooling |  |
|-------------|---------|--|
| 600 - 650°C | furnace |  |

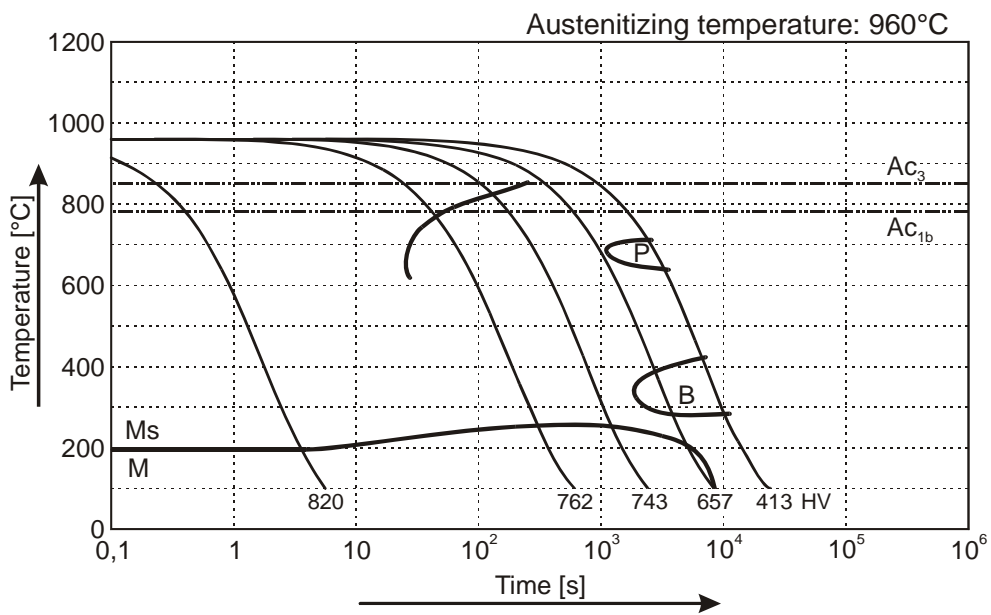
Hardening

| Temperature | Cooling  | Tempering                |
|-------------|--|--------------------------|
| 950 - 980°C | oil, pressure gas (N <sub>2</sub> ),<br>air or hot bath<br>500 - 550°C | see tempering<br>diagram |

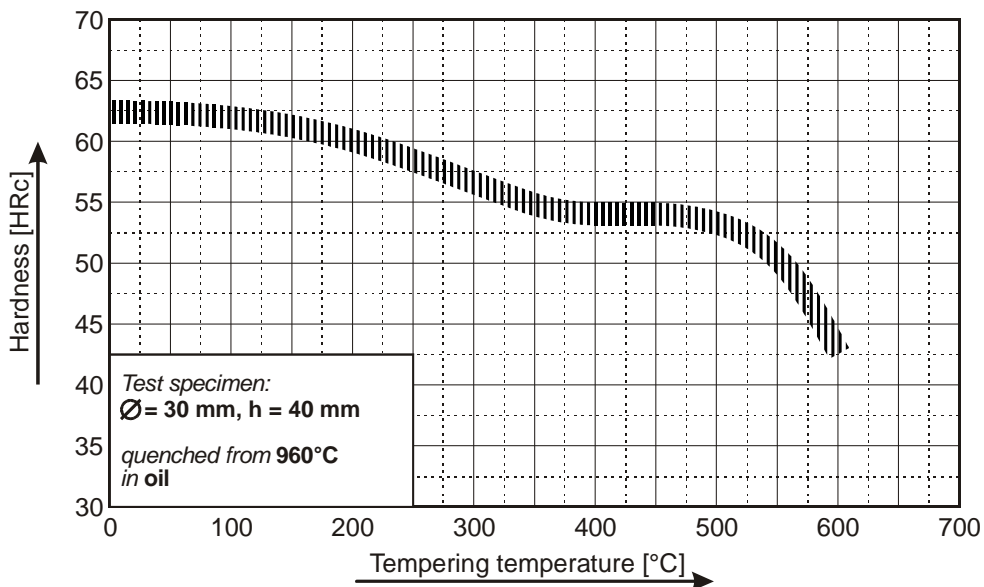
## (1.2358) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.