



## SIQUAL 7016 Steel

### Designation by Standards

Brand Name	Ravne	Mat. No.	DIN	EN	AISI/SAE
SIQUAL 7016	EC60	1.7016	17Cr3	-	5117, 4615

### Chemical Composition (in weight %)

C	Si	Mn	Cr	Mo	Ni	V	W	Others
0.17	max. 0.40	0.55	0.85	-	-	-	-	-

### Description

Alloyed carbon steel.

### Applications

Low stressed components - gears, shafts, crankshafts, connecting rods, cam shafts, etc.

### Physical properties (average values) at ambient temperature

Modulus of elasticity [ $10^3 \times \text{N/mm}^2$ ]: 210

Density [ $\text{g/cm}^3$ ]: 7.85

Thermal conductivity [ $\text{W/m.K}$ ]: 44.0

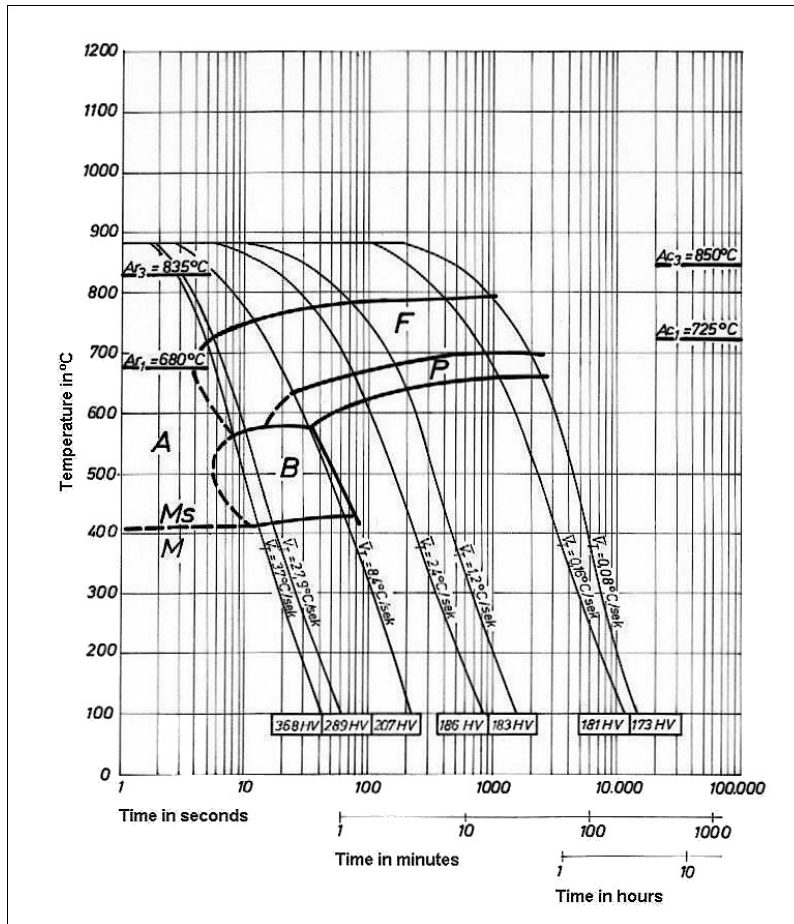
Electric resistivity [ $\text{Ohm mm}^2/\text{m}$ ]: 0.16

Specific heat capacity [ $\text{J/g.K}$ ]: 0.46

### Coefficient of Linear Thermal Expansion $10^{-6} \text{ }^\circ\text{C}^{-1}$

20-100°C	20-200°C	20-300°C	20-400°C	20-500°C
11.1	12.1	12.9	13.5	13.9

## Continuous Cooling Transformation (CCT) Diagram



### Soft Annealing

Heat to  $800\text{--}840^{\circ}\text{C}$ , cool slowly. This will produce a maximum Brinell hardness of 250.

### Stress Relieving

Stress relieving to remove machining stresses should be carried out by heating to  $650^{\circ}\text{C}$ , holding for one hour at heat, followed by air cooling. This operation is performed to reduce distortion during heat treatment.

### Hardening

Harden from a temperature of  $940\text{--}980^{\circ}\text{C}$  followed by oil quenching or warm bath approx.  $400^{\circ}\text{C}$ . Hardness after quenching is 64-66 HRC.

### Tempering

Tempering temperature:  $150\text{--}400^{\circ}\text{C}$ .

### Tempering Temperature ( $^{\circ}\text{C}$ ) vs. Hardness (HRC)

100°C	200°C	300°C	400°C	500°C	600°C
64	62	60	57	53	42

### Forging

Hot forming temperature:  $1050\text{--}850^{\circ}\text{C}$ .

### Machinability

The machinability rating of D3 is roughly 25 % that of free machining carbon steel 1018. Due to its abrasion resistant nature, machining in the hardened condition should be limited to finish grinding.

Forms manufactured: Please see the [Dimensional Sales Program](#).

### Disclaimer

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