



SPECIFICATIONS

European standard:

EN : 80MoCrV42-16

AFNOR: 80MoCrV42-16

W.Nr : 1.3551 / 1.2369

DIN : 80MoCrV42-16 / 81MoCrV42-16

AISI : ~ M50 / ~ 613

PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 200°C: 11.8×10^{-6}
 - between 20°C and 400°C: 12.6×10^{-6}
 - between 20°C and 600°C: 13.3×10^{-6}
- Critical points:
 - Ac 1: 800°C
 - Ac 3: 840°C

COMPOSITION

Carbon.....	0.80
Moybdenum	4.25
Chromium.....	4.00
Vanadium.....	1.00

APPLICATIONS

- Rings and rollers
- Galling components exposed to high pressures and to temperatures below 500°C
- Drop-stamp cores and dies
- Cutting, drawing, extrusion tools

CHARACTERISTICS

- High hardness
- Good toughness
- Good abrasion resistance

HEAT TREATMENT

- Harden:

- 1st Preheat to 550°C.
- 2nd Preheat to 850°C
- Raise from 1060 to 1100°C

Air cool or gas pressure quench

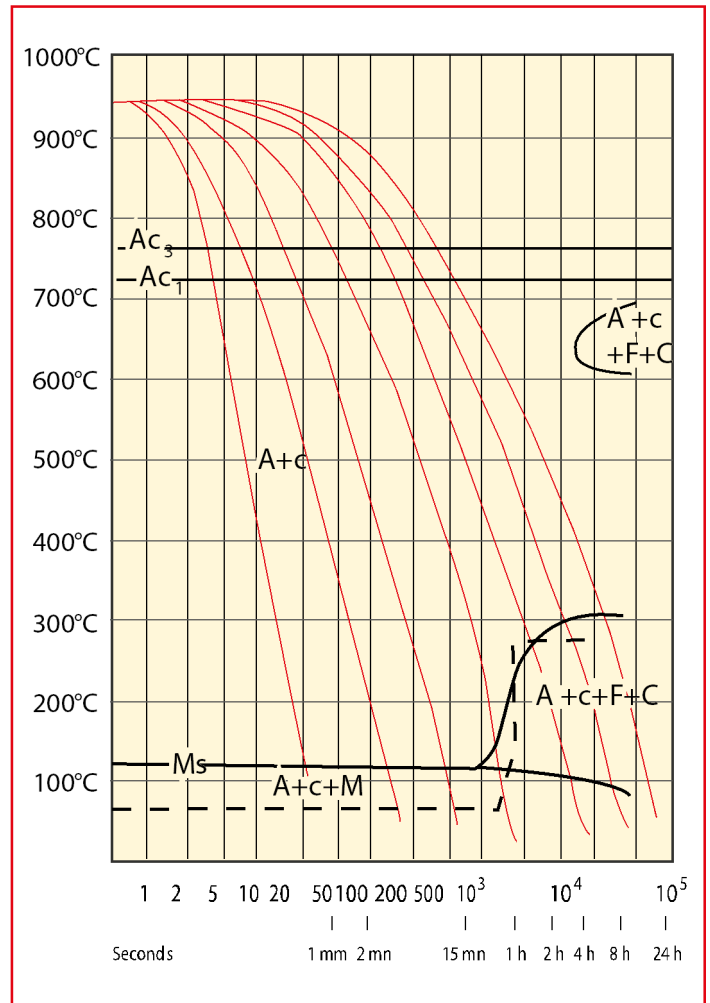
For large parts, air cooling may be replaced by salt bath at 230/250°C, followed by air cooling.

Heating in an inert atmosphere is recommended.

It is recommended that heating should take place in a neutral atmosphere.

CCT DIAGRAM

Austenitizing at 1060°C

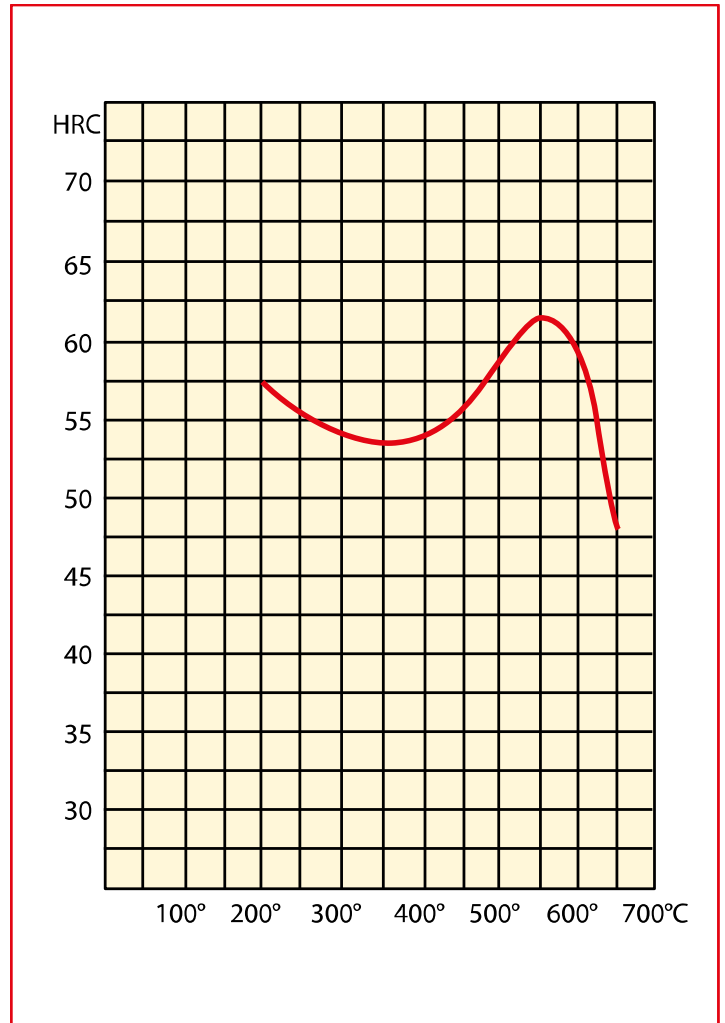


TEMPERING

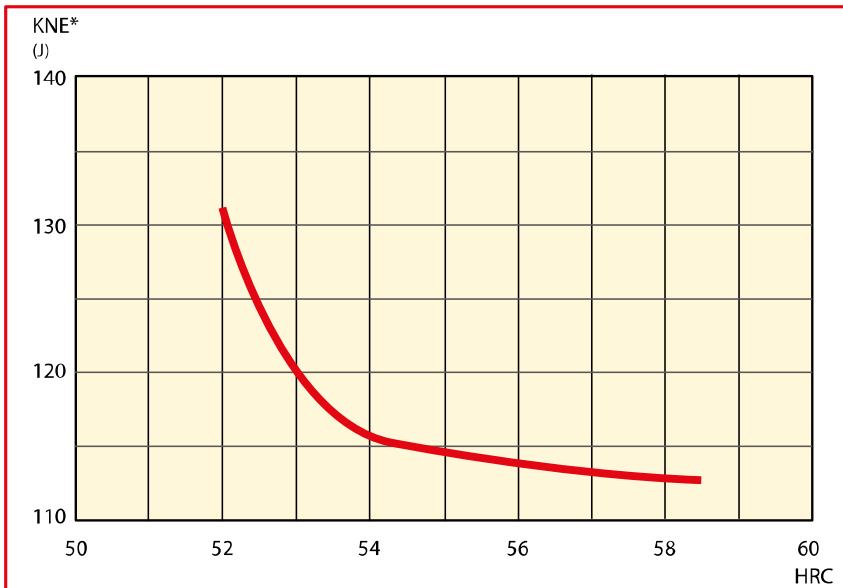
- Double temper at 550°C
- 3rd temper according to properties required

TEMPERING CURVE

TEMPERING CURVE
1 cm thick test piece



MECHANICAL PROPERTIES



VARIATION OF MECHANICAL PROPERTIES WITH TEMPERING TEMPERATURE

- Unnotched specimen
* 7 x 10 x 55 mm

SURFACE TREATMENT

- RA4W is suitable for all nitriding processes. This treatment results in a hard surface layer providing improved resistance to erosion and wear. The hardness obtained after nitriding treatment is of the order of 1000 Vickers.
- RA4W is suitable for all surface coatings.

Contact:

www.aubertduval.com

The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.