

## SPECIFICATIONS

European standard:

EN	: 40CrMoV13-9
AFNOR:	40CrMoV13-9
W.Nr	: 1.8523
DIN	: 40CrMoV13-9

## PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
  - between 20°C and 100°C:  $11.5 \times 10^{-6}$
  - between 20°C and 300°C:  $12.5 \times 10^{-6}$
  - between 20°C and 500°C:  $13.7 \times 10^{-6}$
- Critical points:
  - Ac 1: 795°C
  - Ac 3: 835°C

## COMPOSITION

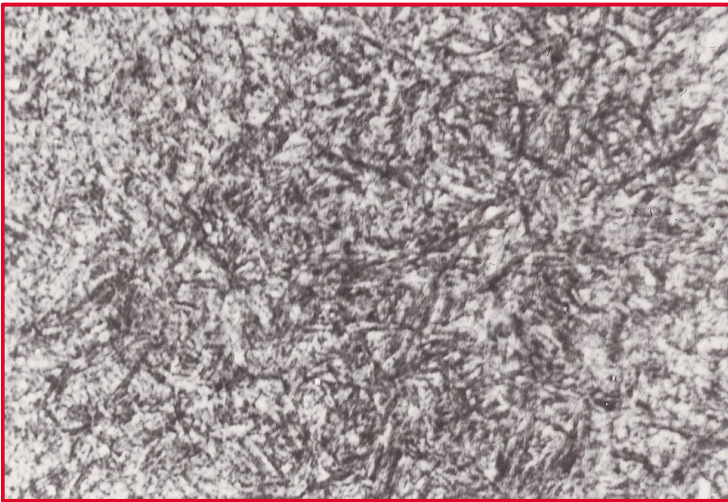
Carbon.....	0.40
Chromium.....	3.00
Moybdenum .....	1.00
Vanadium.....	0.20

## APPLICATIONS

- Moulds for manufacturing plastic materials, suitable for chemical graining.
- Moulds Die blocks and punches.
- Dies for light alloy pressure casting.

## CHARACTERISTICS

- Good resistance to wear
- High level of dimensional stability
- Suitable for polishing and chemical graining
- Nitriding steel.
- Good machining properties.



## STRUCTURE IN THE ANNEALED CONDITION

According to process B2264

Correct structure  
(Mx500)

MEK4 is generally delivered fully heat treated and ready for use with a Brinell hardness of approximately 400, i.e. equivalent to a UTS of 1400 N/mm<sup>2</sup>

## HEAT TREATMENT

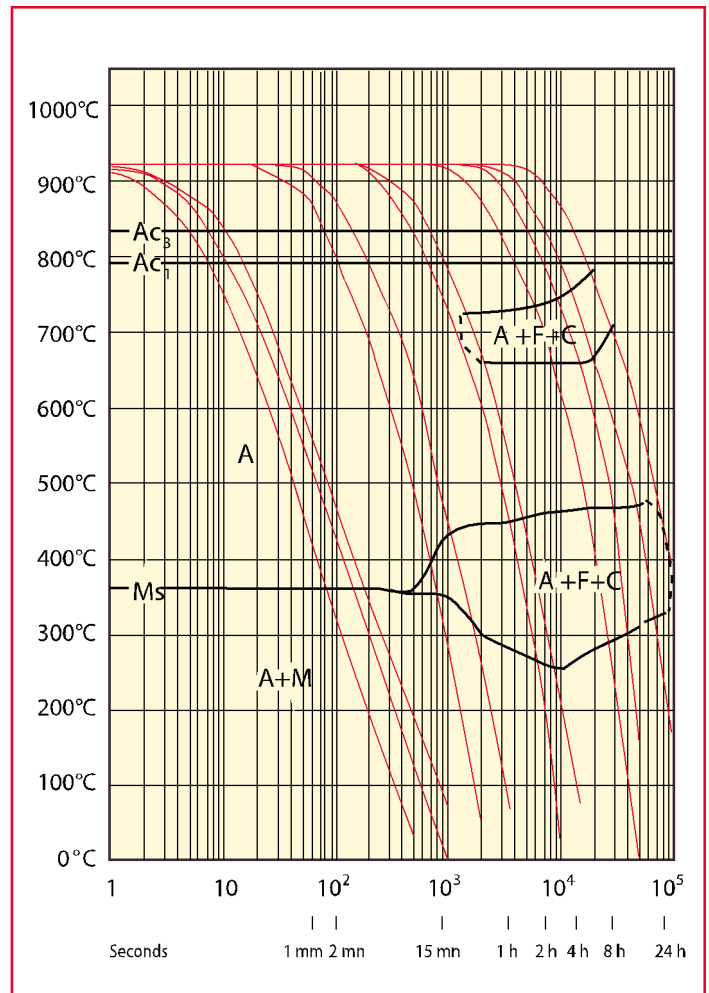
For specific cases where the steel is delivered in the annealed condition.

- Harden:
  - Preheat to 700°C.
  - Raise to 920°C
  - Air cool or gas pressure quench

Oil quenching may be possible depending on the shape of the parts.

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

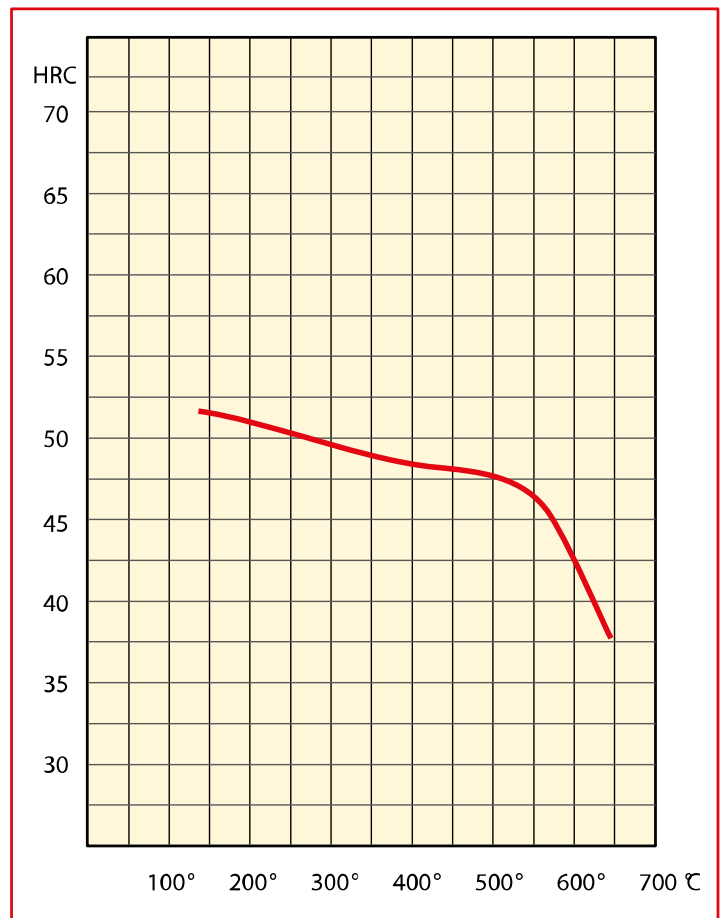
CCT DIAGRAM  
Austenitizing at 920°C



## TEMPERING CURVE

- according to hardness required

TEMPERING CURVE  
1 cm thick test piece



## SURFACE TREATMENT

- MEK4 is suitable for all nitriding processes. This treatment provides a surface layer with:
  - a high degree of hardness of the order of approximately 800 HV,
  - good toughness,
  - very good resistance to erosion and wear.

Contact:

[www.aubertduval.com](http://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.