meusburger

MATERIAL NO.: 1.2311

DESIGNATION ACCORDING TO:

DIN:	40 CrMnMo 7
AFNOR:	40 CMD 8
UNI:	35 CrMo 8 KU
AISI:	P20

TECHNICAL TIP:

» The core strength decreases with increasing plate thickness:
for thickness >300 we recommend 1.2738.

TYPCIAL ANALYSIS:

C	0.40
Si	0.40
Mn	1.50
Cr	1.90
Mo	0.20

HARDNESS: 280-325 HB
(≈ 950-1100 N/mm²)

THERMAL CONDUCTIVITY AT 100 °C: 35 $\frac{W}{m\,K}$

COEFFICIENT OF THERMAL EXPANSION [10^{-6}/K]

100 °C	200 °C	300 °C	400 °C	500 °C	600 °C	700 °C
12.0	12.8	13.3	13.5			

CHARACTER:
» Alloyed and pre-toughened **tool steel,** especially suitable for polishing; high dimensional stability

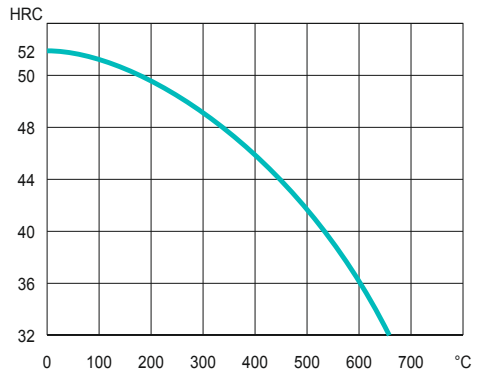
APPLICATION:
» Cavity plates, inserts and high-tensile machine parts

MACHINING:
» Polishing:
good suitability for polishing; for higher surface requirements we recommend steel for through hardening
» Etching, EDM:
possible
» Nitriding:
increases the steel's wear resistance
» Hard chrome plating:
particularly increases the steel´s wear resistance and corrosion resistance

HEAT TREATMENT:
Already pre-toughened; usually no heat treatment required

» Soft annealing:
720 to 740 °C for about 2 to 4 hours
slow controlled cooling inside the furnace
» Nitriding:
before nitriding, stress-relieving heat treatment at 580 °C (Meusburger standard) is recommended.
» Hardening:
840 to 860 °C
quenching in oil/hot bath (180 to 220 °C)
obtainable hardness: **52 HRC**
» Tempering:
slow heating to tempering temperature immediately after hardening;
minimum time in furnace: 1 hour per 25 mm part thickness

TEMPERING GRAPH:



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