

MATERIAL NO.:

1.2842

DESIGNATION:

DIN: 90 MnCrV 8
AFNOR: 90 MV 8
UNI: 90 MnVCr 8 KU
AISI: ≈ O2

TECHNICAL TIP:

» Steel grade 1.2510 is an adequate alternative with regards to its properties, machinability and dimensional stability after heat treatment.

INDICATORY ANALYSIS:

C 0.90
 Si 0.20
 Mn 2.00
 Cr 0.40
 V 0.10

STRENGTH:

max. 230 HB
 (≈ max. 780 N/mm²)

THERMAL CONDUCTIVITY AT 100°C:

33 $\frac{W}{m K}$

COEFFICIENT OF THERMAL EXPANSION [10⁻⁶/K]

100°C	200°C	300°C	400°C	500°C	600°C	700°C
12.2	13.2	13.8	14.3			

CHARACTER:

» **Steel for through-hardening** with good machinability and high wear resistance; low warping and high dimensional stability; with high toughness and through hardenability (uniform hardness for cross sections up to 40 mm)

APPLICATION:

» Cavity plates and inserts exposed to abrasive stress; cutting punches; wear plates, cutting dies and guiding plates; pressure pads and guiding rails

TREATMENT BY:

» Polishing, etching, nitriding:
 not usual - use 1.2379 instead
 » EDM, hard chrome plating:
 is possible

HEAT TREATMENT:

» Soft annealing:
 680 to 720°C for about 2 to 5 hours
 slow controlled cooling inside the furnace: 10 to 20°C per hour to about 600°C;
 further cooling in air, **max. 220 HB**
 » Hardening:
 790 to 820°C
 quenching in oil/hot bath (200 to 250°C)
 obtainable hardness: 63–65 HRC
 » Tempering:
 slow heating (to avoid forming of cracks) to tempering temperature immediately after hardening; double tempering with intermediate cooling down to 20°C increases the steel's toughness max. obtainable hardness after tempering: **58-60 HRC**

TEMPERING CHART:

