

MATERIAL NO.:

1.3344 PM (PM23)

DESIGNATION:

**DIN:** PM 6-5-3  
**AFNOR:** X 130 WMoCrV 6-5-4-3  
**UNI:** W 6 Mo 5 Cr 4 V 3  
**AISI:** M 3-2 (PM)

TECHNICAL TIP:

» Due to the high tempering resistance, excellent for PVD and PACVD coating.

INDICATORY ANALYSIS:

C 1.25  
 Si 0.30  
 Mn 0.30  
 Cr 4.0  
 Mo 5.0  
 V 3.0  
 W 6.2

STRENGTH:

max. 265 HB  
 (≈ max. 905 N/mm<sup>2</sup>)

THERMAL CONDUCTIVITY AT 100 °C:

24  $\frac{W}{mK}$

COEFFICIENT OF THERMAL EXPANSION  
 [10<sup>-6</sup>/K]

100° C	200 °C	300 °C	400 °C	500 °C	600 °C	700 °C
11.4	11.6	11.8	12.1			

CHARACTER:

» Powder metallurgy **high-speed steel** with good machinability, high resistance to adhesive and abrasive wear, with optimal toughness due to the uniform and fine carbide structure, very good through hardenability and high dimensional stability

APPLICATION:

» Blocks for eroding, cutting punches and dies with particularly durable edges, inserts with excellent wear resistance

TREATMENT BY:

» Polishing:  
 best metallurgical properties for mirror polishing  
 » Nitriding:  
 highly suited  
 » EDM:  
 highly suited  
 » Coating:  
 highly suited

HEAT TREATMENT:

» Soft annealing:  
 at 860 to 880 °C, for approx. 2 to 5 hours  
 slow controlled cooling of 10 to 20 °C per hour to about 600 °C; further cooling in air, **max. 260 HB**  
 » Hardening:  
 curing temperature: see **tempering chart**  
 quenching in oil/compressed gas/air/hot bath  
 obtainable hardness: **64-66 HRC**  
 » Tempering:  
 slow heating to tempering temperature (in order to avoid formation of cracks)  
 immediately after hardening;  
 triple tempering is recommended

TEMPERING CHART:

