



AISI M35 M35 DIN 3243

HS6-5-2-5

C 0.92 Cr 4.10 Mo 5.00 V 1.90 W 6.40 Co 4.80

Steel properties

The cobalt content in this high-performance high-speed steel results in high red hardness and tempering resistance. As a consequence, this grade is particularly suitable for conditions involving thermal stresses and discontinuous cutting. Under the name Rapidur 3245, AISI M 35 + S and material number 1.3245, this steel grade is supplied with a higher sulphur content (S = 0.10 %).

Standards

AISI M35

AFNOR Z85WDKCV06-05-05-04-02

Applications

Heavy-duty milling cutters of all kinds, highly stressed twist drills and taps, profile knives, machining of high-strength materials, broaches.

Heat treatment

Soft annealing °C

820 – 860

Cooling

Furnace

Hardness HB

max. 269

Stress-relief annealing °C

630 – 650

Cooling

Furnace

1st pre-heating °C

up to approx. 400 in an air-circulating furnace

2nd and 3rd pre-heating °C

- a) 850
- b) 850 and 1050

Hardening¹ °C

1190 – 1230

Quenching

- a) Saltbath, 550 °C
- b) Oil
- c) Air

Tempering °C

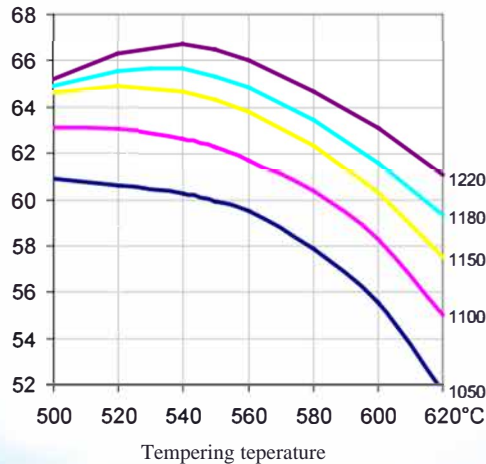
at least three times
540 – 570

Hardness after tempering HRC

64 – 67

¹ For cold-forming tools with a complex geometry, a hardening temperature at the lower end of the quoted range is recommended. The stated hardening temperatures apply to saltbath hardening only. For vacuum hardening, we suggest a reduction of 10 °C to 30 °C.

Tempering Graph



Hardness after hardening, quenching and tempering

Tool	Hardening	Tempering
Single-edge cutting tools	1220 °C	560 °C
Multi-edge cutting tools	1190-1220 °C	550-570 °C
Cold work tools	1050-1150 °C	550-570 °C