

Identification

Material number	Reference number	AISI
1.2842	90MnCrV8	O2

Chemical composition Typical analysis in %

C	Si	Mn	Cr	V
0.90	0.20	2.00	0.40	0.10

Steel properties

Good cutting edge retention, dimensionally stable during heat treatment.

Physical properties

Coefficient of thermal expansion $10^{-6} \text{ m}/(\text{m} \cdot \text{K})$	20 – 100 °C	20 – 200 °C	20 – 300 °C	20 – 400 °C	20 – 500 °C	20 – 600 °C	20 – 700 °C
	12.2	13.2	13.8	14.3	14.7	15.0	15.3
Thermal conductivity $\text{W}/(\text{m} \cdot \text{K})$	20 °C		350 °C		700 °C		
	33.0		32.0		31.3		

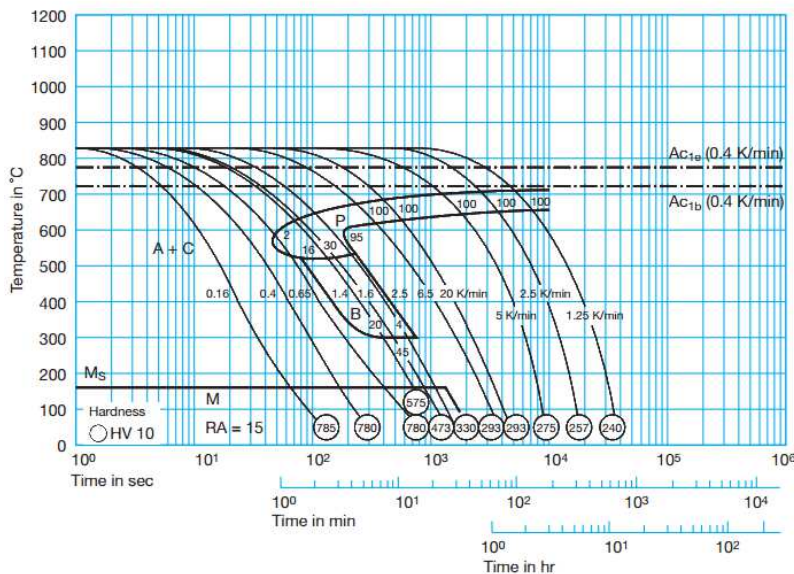
Applications

Tool steel for universal use, cutting and stamping tools for sheet up to 6 mm thickness, thread-cutting tools, reamers, gauges, measuring tools, plastic moulds, shear blades, guide strips and ejector pins.

Heat treatment

Soft annealing °C	Cooling	Hardness HB				
680 – 720	Furnace	max. 220				
Stress-relief annealing °C	Cooling					
approx. 650	Furnace					
Hardening °C	Quenching	Hardness after quenching HRC				
790 – 820	Oil or saltbath (180 – 220 °C)	64				
Tempering °C	100	200	300	400	500	600
HRC	63	60	56	50	42	38

Time-temperature-transformation diagram



Tempering diagram

