RADHIKA ALLOYS

1.2738 | P-20 NICKEL | 40CrMnNiMo8-6-4

This pre-hardened (32 - 37 HRC). Plastic mould steel with excellent hardening penetration, good machinability, polishing and texturing properties.
This steel is used for plastic moulds of medium and big size.

Chemical composition

W.nr	EQUIVALENT			C	Si	Mn	S	P	Cr	Mo	Ni
	JIS	DIN	AISI/ASTM								
1.2738		40CrMnNiM0864	P20+Ni	0.35-0.45	0.20-0.40	1.30-1.60	<0.03	<0.03	1.80-2.10	0.15-0.25	0.90-1.20

Delivery condition

1.2738 is delivered in quenched and tempered condition, with hardness range 300 - 340 HB (32 - 37 HRC).

Physical properties

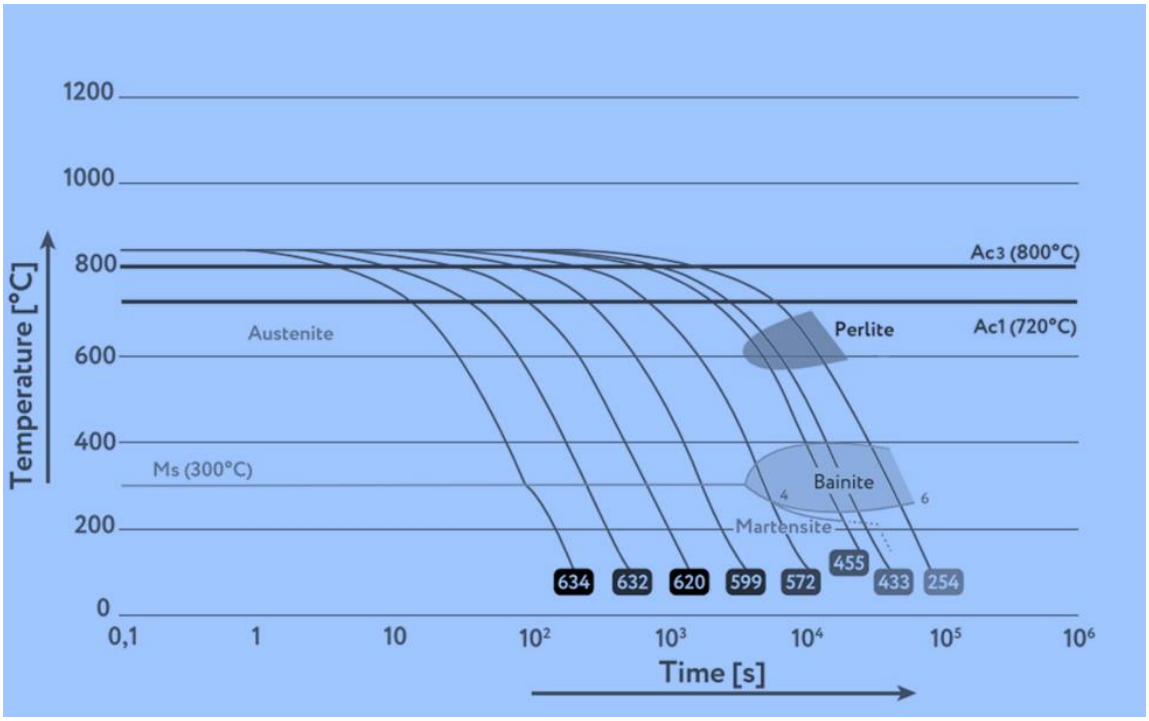
PROPERTIES	20°C	100°C	250°C	500°C
Thermal expansion coefficient (10-6/K)	12	12.4	12.9	14.1
Thermal conductivity (W/mk)	33.1	33.5	34.5	32.6
Young modulus (Kn/mm2)	212	205	200	175

Heat treatment

TREATMENT	TEMPERATURE	HOLDING TIME (HT)	COOLING	COMMENTS

Annealing	Heat to 680 - 700 °C	Min. H.T. for 2 minute /mm	Air or furnace	In order to obtain hardness lower than 250 HB (24 HRC) to improve machinability
Stress relieving	Heat to 560 - 600 °C (max 30 °C below tempering temperature)	Min. H.T. for 2 minute /mm	Air or furnace	To be carried out after machining, is recommended to eliminate the residual stresses induced by mechanical working
Hardening	Heat to 860-880°C	Min. H.T. for 1 minute /mm	Polymer	-
Tempering	Heat to 550 – 620°C	Min. H.T. for 3 minute /mm	Air or furnace	To be carried out after hardening. 2nd Tempering must be performed to max 30°C below tempering temperature

C.C.T. curve



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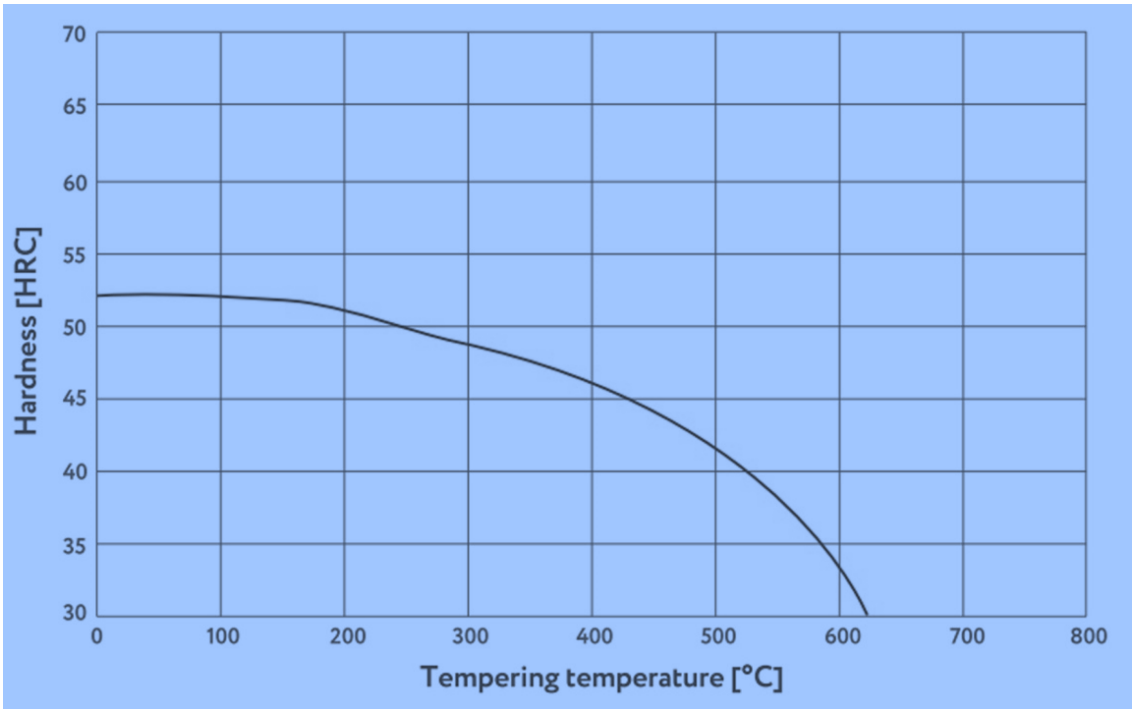
Tempering curve



Application

Thermoplastic injections and extrusion moulds, rubber moulds, large moulds, frames, containers.