

Database of Steel and Alloy (Marochnik)

splat.kharkov.com/en

[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Tool steel](#)

Characteristics for grade R9M4K8 (P9M4K8).

Grade :	R9M4K8 (P9M4K8)
Classification :	High speed tool steel
Equivalent grades:	Go here

Chemical composition in % for grade R9M4K8 (P9M4K8)

C	Si	Mn	Ni	S	P	Cr	Mo	W	V	Co	Cu
1 - 1.1	0.2 - 0.5	0.2 - 0.5	max 0.6	max 0.03	max 0.03	3 - 3.6	3.8 - 4.3	8.5 - 9.5	2.3 - 2.7	7.5 - 8.5	max 0.25

Temperature of critical points for grade R9M4K8 (P9M4K8).

$Ac_1 = 800$, $Ac_3(Ac_m) = 840$, $Ar_3(Arc_m) = 790$, $Ar_1 = 750$

Mechanical properties under T=20°C for grade R9M4K8 (P9M4K8)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			960	540	7	10	80	As-delivered state

Brinell hardness for R9M4K8 (P9M4K8) (annealing), GOST 19265-73

HB 10 ⁻¹ = 285 MPa

Physical properties for grade R9M4K8 (P9M4K8)

T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m ³	J/(kg·Grade)	Ohm·m
20	2.29			8300		
100			25			
200			27			
300			28			
400			29			
500			30			
600			31			
700			32			
800						

900			32			
T	$E 10^{-5}$	$\alpha 10^6$	λ	ρ	C	$R 10^9$

Equivalent steels for grade R9M4K8 (P9M4K8)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	Italy	Sweden	Bulgaria	Hungary	Poland
-	DIN,WNr	JIS	AFNOR	BS	UNI	SS	BDS	MSZ	PN
T11348	S10-4-3-10	SKH57	HS10-4-3-10	BT42	HS10-4-3-10	2736	R9M4K8	R14	SK10V

Specification :**Mechanical properties :**

- σ_B - Tensile strength , [MPa]
 σ_T - Yield stress , [MPa]
 δ_5 - Specific elongation at fracture , [%]
 ψ - Reduction of area , [%]
KCU - Impact strength , [kJ / m²]
HB - Brinell hardness , [MPa]

Physical properties :

- T** - Test temperature , [Grade]
E - Young modulus , [MPa]
 α - Coefficient of linear expansion (range 20° - T) , [1/Grade]
 λ - Thermal (heat) condition coefficient , [Watt/(m·Grade)]
 ρ - Density , [kg/m³]
C - Specific heat (range 20° - T) , [J/(kg·Grade)]
R - Electrical resistance , [Ohm·m]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 2500 steels and alloys (stainless steel, alloy steel, carbone steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).

Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

[Top](#)

© 2003 - 2013 All rights reserved. [About program.](#)

The entire risk as to use of the Database of Steel and Alloy (Marochnik) content is assumed by you the user

