

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 4KH5MF1S (4X5MΦ1C).

Grade :	4KH5MF1S (4X5MΦ1C) (9П572)
Classification :	Die tool steel
Equivalent grades:	Go here

Chemical composition in % for grade 4KH5MF1S (4X5MΦ1C)

C	Si	Mn	Ni	S	P	Cr	Mo	V	Cu
0.37 - 0.44	0.9 - 1.2	0.2 - 0.5	max 0.4	max 0.03	max 0.03	4.5 - 5.5	1.2 - 1.5	0.8 - 1.1	max 0.3

Temperature of critical points for grade 4KH5MF1S (4X5MΦ1C).

$A_{c1} = 875$, $A_{c3}(A_{cm}) = 935$, $A_{r3}(A_{rcm}) = 815$, $A_{r1} = 760$, $Mn = 305$

Mechanical properties under T=20 °C for grade 4KH5MF1S (4X5MΦ1C)

Assortment	Dimension	Direct,	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			1670	1470	10	40	390	Guenching 1020°C, oil, Drawing 580°C, 2h,

Brinell hardness for 4KH5MF1S (4X5MΦ1C) (annealing), GOST 5950-2000	HB 10 ⁻¹ = 241 MPa
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Physical properties for grade 4KH5MF1S (4X5MΦ1C)

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	2.07		22	7716		553
100			25	7692		591
200			27	7660		649
300	1.87		29	7627		715
400			30	7593		793
500			31	7559		879
600	1.6		31	7523		970
700			31	7490		1077
800			31	7459		1189
900			32	7438		1229
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 4KH5MF1S (4X5MΦ1C)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	Czechia	Austria	South Korea
-	DIN,WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	SS	BDS	MSZ	PN	STAS	CSN	ONORM	KS
H13 T20811 T20813	1.2344 X40CrMoV5-1	SKD61	Z40CDV5 X40CrMoV5	2344 BH13	1.2344 X40CrMoV5-1 X40CrMoV5-1-1	UD14 X40CrMoV5-1-1KU	F.5318 X40CrMoV5	4Cr5MoSiV1 SM4Cr5MoSiV1	2214 2242	X40CrMoV5-1	K13 K13K	L40H5MF WCLV	40VSiMoCr52	19554	W302	STD61

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 / m ²]
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 - Termal (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

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