

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 4KH5MFS (4X5MΦC).

Grade :	4KH5MFS (4X5MΦC)
Substitute:	4X5MΦ1C, 4X4BMΦC
Classification :	Die tool steel
Equivalent grades:	Go here

Chemical composition in % for grade 4KH5MFS (4X5MΦC)

C	Si	Mn	Ni	S	P	Cr	Mo	V	Cu
0.32 - 0.4	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	0.3 - 0.5	max 0.3

Temperature of critical points for grade 4KH5MFS (4X5MΦC).

$A_{c1} = 840$, $A_{c3}(A_{cm}) = 870$, $A_{r3}(A_{rcm}) = 810$, $A_{r1} = 735$, $Mn = 300$

Mechanical properties under T=20°C for grade 4KH5MFS (4X5MΦC)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bars	10		1750	1480			570	Guenching 1000 - 1020°C, Drawing 530 - 560°C, Drawing 500 - 520°C,

Brinell hardness for 4KH5MFS (4X5MΦC) (annealing) , GOST 5950-2000	HB 10 ⁻¹ = 241 MPa
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Physical properties for grade 4KH5MFS (4X5MΦC)

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			29	7750		480
100			30	7724		
200			30	7697		
300			31	7670		
400			33	7641		
500			31	7600		
600			30	7573		
700			28	7546		
800			26	7520		
900			27	7495		
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 4KH5MFS (4X5MΦC)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Bulgaria	Poland	Romania	Czechia	Austria	South Korea
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	BDS	PN	STAS	CSN	ONORM	KS
H11 T20811	1.2343 X40CrMoV5-1 X38CrMoV5-1	SKD6	X37CrMoV51KU X38CrMoV5 Z38CDV5	2343 BH11	1.2343 X37CrMoV5-1	UD12 X37CrMoV5-1KU	X37CrMoV5	4Cr5MoSiV SM4Cr5MoSiV	X37CrMoV5-1	WCL	39VSiMoCr52	19552 19553	BOHLERW300 W300	STD6

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	- Thermal (heat) condition coefficient , [Watt/(m·Grade)]
ρ	- Density , [kg/m ³]
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 than 2500 steels and alloys (stainless steel, alloy steel, carbon 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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