

Database of Steel and Alloy (Marochnik)

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

YOU HERE: [Steel and Alloy](#) -> [High-temperature or heat-resistant steel and alloy](#)

Characteristics for grade 12KH14N14V2M (12X14H14B2M).

Grade :	12KH14N14V2M (12X14H14B2M)
Classification :	High alloy high-temperature steel
Equivalent grades:	Is absent

Chemical composition in % for grade 12KH14N14V2M (12X14H14B2M)

C	Si	Mn	Ni	S	P	Cr	Mo	W
max 0.15	0.3 - 0.8	max 0.7	13 - 15	max 0.03	max 0.035	13 - 15	0.4 - 0.6	2 - 2.75

Mechanical properties under T=20°C for grade 12KH14N14V2M (12X14H14B2M)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe	Ø 102 x 68	longitudinal	560	260	44	60	1300	
Bar	Ø 25	longitudinal	570	228	67.7	62.8	3400	

Technological properties for grade 12KH14N14V2M (12X14H14B2M)

Weldability:	without limitations.
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Physical properties for grade 12KH14N14V2M (12X14H14B2M)

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	2.02			8100	461	
100	2	15.6	6.3		486	830
200	1.92	15.7	11.8		515	890
300	1.84	17.3	16.7		536	950
400	1.78	17.3	20.9		544	1010
500	1.71	17.3	24.3		557	1050
600	1.63	18.2	27.2		590	1080
700	1.57	18.4	29.7		624	1130
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

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]

Weldability :

- without limitations** - welding is done without heating and subsequent heat treating
limited weldability - welding is possible under heating up to 100-120 grade and subsequent heat treating
hard weldability - obtaining the quality welding needs the additional operations: heating up to 200-300 grade; the heat treating is annealing

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

[Top](#)

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