

Database of Steel and Alloy (Marochnik)

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Characteristics for grade KHN70VMYUT (XH70BMiOT).

Grade :	KHN70VMYUT (XH70BMiOT) (ЭИ765)
Classification :	High-temperature or heat-resistant alloy
Equivalent grades:	Is absent

Chemical composition in % for grade KHN70VMYUT (XH70BMiOT)

Fe	C	Si	Mn	Ni	S	P	Cr	Mo	W	Ti	Al	Cu	B
max 3	0.01 - 0.16	max 0.6	max 0.5	65.02 - 76.29	max 0.02	max 0.02	14 - 16	3 - 5	4 - 6	1 - 1.4	1.7 - 2.2	max 0.07	max 0.01

Comment: Ni is a basis; the percentage of Ni is given approximately.

Mechanical properties under T=20°C for grade KHN70VMYUT (XH70BMiOT)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar		longitudinal	1030	670	28	26	800	Heating 1150°C, 3h, Cooling oil, Ageing 800°C, 20h, Cooling air,

Brinell hardness for KHN70VMYUT (XH70BMiOT) ,	HB 10 ⁻¹ = 277 - 302 MPa
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Technological properties for grade KHN70VMYUT (XH70BMiOT)

Weldability:	hard weldability.
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Physical properties for grade KHN70VMYUT (XH70BMiOT)

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	2.26			8600		1330
100	2.21	12.2	9.2	8570		1340
200	2.15	12.65	12.6	8540		1350
300	2.09	13.2	16.7	8510		1360
400	2.02	13.6	19.2	8470		1360
500	1.96	14.1	23	8430		1370
600	1.9	14.55	25.9	8390		1470
700	1.82	15.1	29.3	8340		1480
800		15.8		8290		
900				8240		
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 / 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]

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).
Helpful for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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