

Database of Steel and Alloy (Marochnik)

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Characteristics for grade KHN45YU (XH45Ю).

Grade :	KHN45YU (XH45Ю)(ЭП747)
Classification :	High-temperature or heat-resistant alloy
Equivalent grades:	Is absent

Chemical composition in % for grade KHN45YU (XH45Ю)

Fe	C	Si	Mn	Ni	S	P	Cr	Ce	Al	Ba
30.825 - 38.1	max 0.1	max 1	max 1	44 - 46	max 0.02	max 0.025	15 - 17	max 0.03	2.9 - 3.9	max 0.1

Mechanical properties under T=20°C for grade KHN45YU (XH45Ю)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 24982-81			590		30			Guenching 1060 - 1100°C,
Bar	Ø 8 - 10	longitudinal	600	220	15	20		Heating 1050 - 1150°C,

Physical properties for grade KHN45YU (XH45Ю)

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			7760		
100	2.01	15.8	10.5			
200	1.92	15.9	12.2			
300	1.87	15.95	13.8			
400	1.78	16.55	15.4			
500	1.71	16.6	17.5			
600	1.56	19	19.2			
700		19.7				
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 $20^{\circ} - T$) , [1/Grade]
 λ - Thermal (heat) condition coefficient , [Watt/(m·Grade)]
 ρ - Density , [kg/m³]
C - Specific heat (range $20^{\circ} - T$) , [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, 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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