

Database of Steel and Alloy (Marochnik)

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Characteristics for grade KHN35VTYU (XH35BTIO).

Grade :	KHN35VTYU (XH35BTIO) (ЭИ787)
Classification :	High-temperature or heat-resistant alloy
Equivalent grades:	Is absent

Chemical composition in % for grade KHN35VTYU (XH35BTIO)

Fe	C	Si	Mn	Ni	S	P	Cr	W	Ti	Al	B
37.545 - 47.4	max 0.08	max 0.6	max 0.6	33 - 37	max 0.02	max 0.035	14 - 16	2.5 - 3.5	2.4 - 3.2	0.7 - 1.4	max 0.02

Mechanical properties under T=20°C for grade KHN35VTYU (XH35BTIO)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ/m ²	-
Bar		longitudinal	1050	700	7	10	250	

Brinell hardness for KHN35VTYU (XH35BTIO) ,	HB 10 ⁻¹ = 302 - 354 MPa
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Technological properties for grade KHN35VTYU (XH35BTIO)

Weldability:	hard weldability.
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Physical properties for grade KHN35VTYU (XH35BTIO)

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	2.15			8040		992
100	2.1	12.7	15.4			
200	2.02	14.1	17.5			
300	1.99	15	19.2			
400	1.92	15.4	20.9			
500	1.85	15.8	22.6			
600	1.73	16	24.7			
700	1.66	16.6	25.9			
800	1.51	16.8	27.6			
900		18.4	29.3			
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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