

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 10KH18N18YU4D (10X18H18Ю4Д).

Grade :	10KH18N18YU4D (10X18H18Ю4Д)
Classification :	High alloy high-temperature steel
Equivalent grades:	Is absent

Chemical composition in % for grade 10KH18N18YU4D (10X18H18Ю4Д)

C	Si	Mn	Ni	S	P	Cr	Ce	Al	Cu
0.07 - 0.13	max 0.8	max 0.8	18 - 19.5	max 0.02	max 0.035	18 - 19.5	max 0.03	3.2 - 4.2	0.4 - 0.6

Mechanical properties under T=20°C for grade 10KH18N18YU4D (10X18H18Ю4Д)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet	4 - 11	dihedral	500		40			Heating 1080°C, Cooling air,
Bar	Ø 40	longitudinal	600	340	28	35		Heating 1130 - 1150°C, Cooling air,

Physical properties for grade 10KH18N18YU4D (10X18H18Ю4Д)

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	1.86			7630		
100	1.82	15.5	12.4			
200	1.78	16.5	13.4			
300	1.71	17	15.4			
400	1.65	17.4	17.1			
500	1.61	17.65	18.4			
600	1.56	18.2	20.5			
700	1.46	18.4	21.7			
800	1.38	18.8	23			
900	1.27	18.6				
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]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 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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