

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 50NKHS (50HXC).

Grade :	50NKHS (50HXC)
Classification :	Magnetically soft precision alloy
Equivalent grades:	Is absent

Chemical composition in % for grade 50NKHS (50HXC)

Fe	C	Si	Mn	Ni	S	P	Cr	Cu
42.03 - 45	max 0.03	1.1 - 1.4	0.6 - 1.1	49.5 - 51	max 0.02	max 0.02	3.8 - 4.2	max 0.2

Mechanical properties under T=20°C for grade 50NKHS (50HXC)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band, GOST 10160-75			490	145	40			
Band cold-worked , GOST 10160-75			880	835	2			

Brinell hardness for 50NKHS (50HXC) , Band GOST 10160-75	HB 10⁻¹ = 125 MPa
Brinell hardness for 50NKHS (50HXC) , Band GOST 10160-75	HB 10⁻¹ = 190 MPa

Physical properties for grade 50NKHS (50HXC)

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	2.1			8200		900

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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