

Database of Steel and Alloy (Marochnik)

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Characteristics for grade NKH9 (HX9).

Grade :	NKH9 (HX9) (ХромельК)
Classification :	Nickel alloys
Equivalent grades:	Is absent

Chemical composition in % for grade NKH9 (HX9)

Ni+Co	Fe	C	Si	Mn	S	P	Cr	Co	Al	Cu	As	Pb	Mg	Sb	Bi	Impurity
87.4 - 91.1	max 0.3	max 0.2	max 0.4	max 0.3	max 0.01	max 0.003	8.5 - 10	0.4 - 1.2	max 0.15	max 0.25	max 0.002	max 0.002	max 0.05	max 0.002	max 0.002	all 1.4

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

Mechanical properties under T=20°C for grade NKH9 (HX9)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
soft			600-700		34-45			
hard			1100		3			

Brinell hardness for NKH9 (HX9) , soft	HB 10 ⁻¹ = 150 - 200 MPa
Brinell hardness for NKH9 (HX9) , hard	HB 10 ⁻¹ = 300 MPa

Technological properties of the material NKH9 (HX9) .

Melting temperature :	1435 °C
Annealing temperature :	800 - 850 °C
Casting temperature :	1550 °C

Physical properties for grade NKH9 (HX9)

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		12.8		8700		

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]

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

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