

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 81NMA (81HMA).

Grade :	81NMA (81HMA)
Classification :	Magnetically soft precision alloy
Equivalent grades:	Is absent

Chemical composition in % for grade 81NMA (81HMA)

Fe	C	Si	Mn	Ni	S	P	Mo	Ti
9.32 - 12.3	max 0.01	max 0.1	max 0.35	80.5 - 81.7	max 0.01	max 0.01	4.7 - 5.2	2.5 - 3.3

Mechanical properties under T=20°C for grade 81NMA (81HMA)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band, GOST 10160-75			640	245	50			
Band cold-worked , GOST 10160-75			1270	1225	2			

Brinell hardness for 81NMA (81HMA) , Band GOST 10160-75	HB 10 ⁻¹ = 160 MPa
Brinell hardness for 81NMA (81HMA) , Band GOST 10160-75	HB 10 ⁻¹ = 260 MPa

Physical properties for grade 81NMA (81HMA)

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			8700		800
100		11.8				

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/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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