

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 45N (45H).

Grade :	45N (45H)
Classification :	Magnetically soft precision alloy
Equivalent grades:	Is absent

Chemical composition in % for grade 45N (45H)

Fe	C	Si	Mn	Ni	S	P	Cu
51.83 - 54.25	max 0.03	0.15 - 0.3	0.6 - 1.1	45 - 46.5	max 0.02	max 0.02	max 0.2

Mechanical properties under T=20°C for grade 45N (45H)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band cold-worked , GOST 10160-75			740	735	3	15		

Brinell hardness for 45N (45H) , Band GOST 10160-75	HB 10 ⁻¹ = 130 MPa
Brinell hardness for 45N (45H) , Band GOST 10160-75	HB 10 ⁻¹ = 170 MPa

Physical properties for grade 45N (45H)

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			8200		540

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 $20^{\circ} - T$), [1/Grade]
- λ - Thermal (heat) condition coefficient, [Watt/(m·Grade)]
- ρ - Density, [kg/m³]
- C** - Specific heat (range $20^{\circ} - T$), [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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