

Database of Steel and Alloy (Marochnik)

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Characteristics for grade MNMts3-12 (MHMц3-12).

Grade :	MNMts3-12 (MHMц3-12)
Classification :	Copper-nickel alloys
Equivalent grades:	Is absent

Chemical composition in % for grade MNMts3-12 (MHMц3-12)

Ni+Co	Fe	C	Si	Mn	S	P	Cu	As	Pb	Mg	Sb	Bi	Impurity
2.5 - 3.5	max 0.5	max 0.05	max 0.1	11.5 - 13.5	max 0.02	max 0.005	82.1 - 86	max 0.005	max 0.02	max 0.03	max 0.002	max 0.002	all 0.9

Comment: **Cu** is a basis; the percentage of **Cu** is given approximately.

Mechanical properties under T=20°C for grade MNMts3-12 (MHMц3-12)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
soft			400-550		30-35			
hard			800-900		2-4			

Brinell hardness for MNMts3-12 (MHMц3-12) , soft	HB 10 ⁻¹ = 120 MPa
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Technological properties of the material MNMts3-12 (MHMц3-12) .

Melting temperature :	1010 °C
Forging temperature :	750 - 850 °C
Annealing temperature :	700 - 750 °C

Physical properties for grade MNMts3-12 (MHMц3-12)

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	1.27		22	8400		435
100		16				

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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