

Database of Steel and Alloy (Marochnik)

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Characteristics for grade MNA13-3 (MHA13-3).

Grade :	MNA13-3 (MHA13-3) (КуниальА)
Classification :	Copper-nickel alloys
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Chemical composition in % for grade MNA13-3 (MHA13-3)

Ni+Co	Fe	Mn	Al	Cu	Pb	Impurity
12 - 15	max 1	max 0.5	2.3 - 3	80.1 - 85.7	max 0.002	all 1.9

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

Mechanical properties under T=20°C for grade MNA13-3 (MHA13-3)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
soft			380-470		10-15			
hard			900-950		2-4			

Brinell hardness for MNA13-3 (MHA13-3) , hard	HB 10 ⁻¹ = 255 MPa
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Technological properties of the material MNA13-3 (MHA13-3) .

Melting temperature :	1120 °C
Forging temperature :	900 - 1000 °C

Physical properties for grade MNA13-3 (MHA13-3)

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				8500		

Equivalent steels for grade MNA13-3 (MHA13-3)

Warning! Indicated both exact and nearest equivalents.

USA
-
C72400

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 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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