

Database of Steel and Alloy (Marochnik)

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Characteristics for grade BrAZHN10-4-4 (БpAKH10-4-4).

Grade :	BrAZHN10-4-4 (БpAKH10-4-4) (CuAl10Fe4Ni4)
Classification :	Tin-free pressure-worked bronzes
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Chemical composition in % for grade BrAZHN10-4-4 (БpAKH10-4-4)

Fe	Si	Mn	Ni	P	Al	Cu	Pb	Zn	Sn	Impurity
3.5 - 5.5	max 0.1	max 0.3	3.5 - 5.5	max 0.01	9.5 - 11	77.4 - 83.5	max 0.02	max 0.3	max 0.1	all 0.6

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

Mechanical properties under T=20°C for grade BrAZHN10-4-4 (БpAKH10-4-4)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe, GOST 1208-90			640		5			
Bar, GOST 1628-78			640		5			

Brinell hardness for BrAZHN10-4-4 (БpAKH10-4-4) , Pipe GOST 1208-90	HB 10 ⁻¹ = 170 - 220 MPa
Brinell hardness for BrAZHN10-4-4 (БpAKH10-4-4) , Bar GOST 1628-78	HB 10 ⁻¹ = 170 - 220 MPa

Friction coefficient of the material BrAZHN10-4-4 (БpAKH10-4-4) .

Friction coefficient with oil :	0.011
Friction coefficient without oil :	0.23

Technological properties of the material BrAZHN10-4-4 (БpAKH10-4-4) .

Melting temperature :	1084 °C
Forging temperature :	800 - 900 °C
Annealing temperature :	700 - 750 °C

Physical properties for grade BrAZHN10-4-4 (БpAKH10-4-4)

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	1.15		80	7500		190
100		17.1				

Equivalent steels for grade BrAZHN10-4-4 (БpAKH10-4-4)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Poland	Czechia	Austria	Inter

-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	PN	CSN	ONORM	ISO
C63000	2.0966 CuAl10Ni5Fe4	C6301	CuAl9Ni5Fe3	CA104	CuAl10Ni5Fe4	PCuAl10Fe5Ni5	CuAl10Ni5Fe4	423047	CuAl10Ni5Fe4	CuAl10Ni5Fe4

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° - 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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