

Database of Steel and Alloy (Marochnik)

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Characteristics for grade BrA10ZH4N4L (БpA10Ж4H4Л).

Grade :	BrA10ZH4N4L (БpA10Ж4H4Л) (БpAЖH10-4-4Л)
Classification :	Tin-free foundry bronzes
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Chemical composition in % for grade BrA10ZH4N4L (БpA10Ж4H4Л)

Fe	Si	Mn	Ni	P	Al	Cu	As	Pb	Zn	Sb	Sn	Impurity
3.5 - 5.5	max 0.2	max 0.5	3.5 - 5.5	max 0.1	9.5 - 11	23.5 - 83.5	max 0.05	max 0.05	max 0.5	max 0.05	max 0.2	all 1.5

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

Mechanical properties under T=20°C for grade BrA10ZH4N4L (БpA10Ж4H4Л)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
cast in a metal mould, GOST 493-79			587		6			
sand (mould) casting, GOST 493-79			587		5			

Brinell hardness for BrA10ZH4N4L (БpA10Ж4H4Л), cast in a metal mould GOST 493	HB 10 ⁻¹ = 170 MPa
Brinell hardness for BrA10ZH4N4L (БpA10Ж4H4Л), sand (mould) casting GOST 493	HB 10 ⁻¹ = 160 MPa

Friction coefficient of the material BrA10ZH4N4L (БpA10Ж4H4Л).

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

Physical properties for grade BrA10ZH4N4L (БpA10Ж4H4Л)

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	1.13	17.1	75.4	7500		193

Equivalent steels for grade BrA10ZH4N4L (БpA10Ж4H4Л)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Sweden	Poland	Czechia
-	DIN, WNr	JIS	AFNOR	BS	EN	SS	PN	CSN

C95500	2.0971 GCuAl10Ni NiAlBz	AIBC3 H5114/class3	CuAl10Fe5Ni5	AB2	CuAl10Fe5Ni5-C	CuAl10Fe5Ni5	CuAl10Fe4Ni4	423147
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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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