

Database of Steel and Alloy (Marochnik)

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Characteristics for grade BrAZH9-4 (БpAKЖ9-4).

Grade :	BrAZH9-4 (БpAKЖ9-4) (CuAl9Fe3)
Classification :	Tin-free pressure-worked bronzes
Equivalent grades:	Go here

Chemical composition in % for grade BrAZH9-4 (БpAKЖ9-4)

Fe	Si	Mn	P	Al	Cu	Pb	Zn	Sn	Impurity
2 - 4	max 0.1	max 0.5	max 0.01	8 - 10	84.3 - 90	max 0.01	max 1	max 0.1	all 1.7

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

Mechanical properties under T=20°C for grade BrAZH9-4 (БpAKЖ9-4)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 1628-78			540		15			
soft			400-500		35-45			
hard			500-700		4-6			

Brinell hardness for BrAZH9-4 (БpAKЖ9-4), Bar GOST 1628-78	HB 10 ⁻¹ = 110 - 180 MPa
Brinell hardness for BrAZH9-4 (БpAKЖ9-4), soft	HB 10 ⁻¹ = 100 - 120 MPa
Brinell hardness for BrAZH9-4 (БpAKЖ9-4), hard	HB 10 ⁻¹ = 160 - 200 MPa

Friction coefficient of the material BrAZH9-4 (БpAKЖ9-4).

Friction coefficient with oil :	0.004
Friction coefficient without oil :	0.18

Technological properties of the material BrAZH9-4 (БpAKЖ9-4).

Melting temperature :	1040 °C
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Physical properties for grade BrAZH9-4 (БpAKЖ9-4)

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	1.16		58	7500		120

100	16.2	423
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Equivalent steels for grade BrAZH9-4 (БpAЖ9-4)

Warning! Indicated both exact and nearest equivalents.

USA	Czechia	Inter
-	CSN	ISO
C61900	423045	CuAl8Fe3

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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