

Database of Steel and Alloy (Marochnik)

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Characteristics for grade BrA9ZH4 (БpA9Ж4).

Grade :	BrA9ZH4 (БpA9Ж4)
Classification :	Tin-free foundry bronzes
Equivalent grades:	Is absent

Chemical composition in % for grade BrA9ZH4 (БpA9Ж4)

Fe	Al	Cu	Impurity
2 - 4	8 - 10	83.3 - 90	all 2.7

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

Mechanical properties under T=20°C for grade BrA9ZH4 (БpA9Ж4)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			390	196	-10	30	588	

Brinell hardness for BrA9ZH4 (БpA9Ж4) ,	HB 10 ⁻¹ = 98 MPa
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Friction coefficient of the material BrA9ZH4 (БpA9Ж4) .

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

Technological properties of the material BrA9ZH4 (БpA9Ж4) .

Melting temperature :	1040 °C
Linear shrinkage :	2.49 %

Physical properties for grade BrA9ZH4 (БpA9Ж4)

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	1.107		58.6	7600		123
100		16.32				

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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