

Database of Steel and Alloy (Marochnik)

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[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Bronze](#)

Characteristics for grade BrA5 (БpA5).

Grade :	BrA5 (БpA5) (CuAl5)
Classification :	Tin-free pressure-worked bronzes
Equivalent grades:	Go here

Chemical composition in % for grade BrA5 (БpA5)

Fe	Si	Mn	P	Al	Cu	Pb	Zn	Sn	Impurity
max 0.5	max 0.1	max 0.5	max 0.01	4 - 6	92.9 - 96	max 0.03	max 0.5	max 0.1	all 1.1

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

Mechanical properties under T=20°C for grade BrA5 (БpA5)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
soft			360-440		60-70			
hard			700-800		4-6			

Brinell hardness for BrA5 (БpA5) , soft	HB 10 ⁻¹ = 55 - 65 MPa
Brinell hardness for BrA5 (БpA5) , hard	HB 10 ⁻¹ = 190 - 210 MPa

Friction coefficient of the material BrA5 (БpA5) .

Friction coefficient with oil :	0.007
Friction coefficient without oil :	0.3

Technological properties of the material BrA5 (БpA5) .

Melting temperature :	1060 °C
Forging temperature :	750 - 850 °C
Annealing temperature :	600 - 700 °C

Physical properties for grade BrA5 (БpA5)

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	1.2		105	8200		100

100

15.6

Equivalent steels for grade BrA5 (БpA5)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	France	European	Italy	Poland	Czechia	Austria
-	DIN, WNr	AFNOR	EN	UNI	PN	CSN	ONORM
C60600 C60800	2.0918 CuAl5As	CuAl6	CuAl5As	P-CuAl5	CuAl5As	423042	CuAl5As

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

[Top](#)

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