

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AMg10 (AMr10).

Grade :	AMg10 (AMr10) (АЛ27)
Classification :	Aluminium casting alloys
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Chemical composition in % for grade AMg10 (AMr10)

Fe	Si	Mn	Ti	Al	Cu	Zr	Be	Mg	Zn	Impurity
max 0.2	max 0.2	max 0.1	0.05 - 0.15	88.5 - 90.35	max 0.15	0.05 - 0.2	0.05 - 0.15	9.5 - 10.5	max 0.1	all 0.5

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

Mechanical properties under T=20°C for grade AMg10 (AMr10)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Casting, GOST 1583-93			314		12			

Brinell hardness for AMg10 (AMr10) , Casting GOST 1583-93	HB 10 ⁻¹ = 75 MPa
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Technological properties of the material AMg10 (AMr10).

Linear shrinkage :	1.2 %
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Physical properties for grade AMg10 (AMr10)

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				2550		
100		24.5	89		1050	

Equivalent steels for grade AMg10 (AMr10)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Czechia	Inter
-	DIN, WNr	JIS	AFNOR	BS	EN	CSN	ISO
520.0 A05200	3.3292 GD-AMg9	AC7B ADC5 Al-Mg10	A-G10SY4	LM10	ENAC-51200 ENAC-AMg9	424519	AlMg10

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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