

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AL4M (АЛ4М).

Grade :	AL4M (АЛ4М)
Classification :	Aluminium casting alloys
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Chemical composition in % for grade AL4M (АЛ4М)

Fe	Si	Mn	Ti	Al	Cu	Zr	B	Mg	Impurity
max 0.25	8.5 - 10.5	max 0.1	0.1 - 0.3	84.75 - 89.79	1.3 - 2.5	max 0.3	0.01 - 0.1	0.3 - 0.6	all 0.6

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

Mechanical properties under T=20°C for grade AL4M (АЛ4М)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			300-350		2-3			

Brinell hardness for AL4M (АЛ4М) ,	HB 10 ⁻¹ = 90 MPa
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Technological properties of the material AL4M (АЛ4М).

Linear shrinkage :	1 %
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Physical properties for grade AL4M (АЛ4М)

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				2720		50.9
100		22.2	150		837	

Equivalent steels for grade AL4M (АЛ4М)

Warning! Indicated both exact and nearest equivalents.

USA	China
-	GB
354. 0 A03541	ZL111

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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