

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AK5M (AK5M).

Grade :	AK5M (AK5M) (A15)
Classification :	Aluminium casting alloys
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Chemical composition in % for grade AK5M (AK5M)

Fe	Si	Mn	Al	Cu	Be	Mg	Zn	Sn	Impurity	-
max 1.5	4.5 - 5.5	max 0.5	90.7 - 94.15	1 - 1.5	max 0.1	0.35 - 0.6	max 0.3	max 0.01	all 1.7	Ti+Zr<0.15

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

Mechanical properties under T=20°C for grade AK5M (AK5M)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Casting, GOST 1583-93			157-235		0.5-1			

Brinell hardness for AK5M (AK5M) , Casting GOST 1583-93	HB 10 ⁻¹ = 65 - 70 MPa
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Physical properties for grade AK5M (AK5M)

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	0.7			2680		46.2
100		23.1	163		838	

Equivalent steels for grade AK5M (AK5M)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	England	China	Czechia	Inter
-	DIN, WNr	JIS	BS	GB	CSN	ISO
305.0 355.0 A03550	G-AlSi5(Cu) G-AlSi5Mg GK-AlSi5Mgwa G—AlSi5Cu	AC4A AC4D	3L78 LM16	HZL105 ZAlSi5Cu1Mg ZL105	424380	AlSi5Cu1Mg

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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