

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AK9ch (AK9ч).

Grade :	AK9ch (AK9ч) (АЛ4)
Classification :	Aluminium casting alloys
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Chemical composition in % for grade AK9ch (AK9ч)

Fe	Si	Mn	Ni	Al	Cu	Pb	Be	Mg	Zn	Sn	Impurity
max 1	8 - 10.5	0.2 - 0.5	max 0.1	86.94 - 91.63	max 0.3	max 0.05	max 0.1	0.17 - 0.3	max 0.3	max 0.01	all 1.5

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

Mechanical properties under T=20°C for grade AK9ch (AK9ч)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
cast in a metal mould, GOST 1583-93			235		3			Quenching and artificial aging
cast in a metal mould, GOST 1583-93			147		2			

Brinell hardness for AK9ch (AK9ч) (heat treatment) , GOST 1583-93	HB 10⁻¹ = 50 - 70 MPa
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Physical properties for grade AK9ch (AK9ч)

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			2650		46.8
100		21.7	155		755	

Equivalent steels for grade AK9ch (AK9ч)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	China	Inter
-	DIN, WNr	JIS	AFNOR	BS	GB	ISO
360.0 A03600 A13600	G- AlSi10Mg GK- AlSi10Mgwa	AC4A	A-S9G A—S10G	L75 LM9	HZL104 ZAlSi9Mg ZL10 ZL104	AlSi10Mg AlSi9Mg

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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