

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](#) -> [Aluminium alloy](#)

Characteristics for grade AK13MMgN (AK12MMrH).

Grade :	AK13MMgN (AK12MMrH) (АЛ30)
Classification :	Aluminium casting alloys
Equivalent grades:	Go here

Chemical composition in % for grade AK13MMgN (AK12MMrH)

Fe	Si	Mn	Ni	Cr	Ti	Al	Cu	Pb	Mg	Zn	Sn	Impurity
max 0.7	11 - 13	max 0.2	0.8 - 1.3	max 0.2	max 0.2	82.64 - 86.6	0.8 - 1.5	max 0.05	0.8 - 1.3	max 0.2	max 0.01	all 1.1

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

Mechanical properties under T=20°C for grade AK13MMgN (AK12MMrH)

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			196-216		0.5-0.7			Ageing

Brinell hardness for AK13MMgN (AK12MMrH) , cast in a metal mould GOST 1583-93	HB 10 ⁻¹ = 90 - 100 MPa
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Technological properties of the material AK13MMgN (AK12MMrH).

Casting temperature :	700 °C
Linear shrinkage :	1.15 %

Physical properties for grade AK13MMgN (AK12MMrH)

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				2700		
100		19				

Equivalent steels for grade AK13MMgN (AK12MMrH)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	China	Inter
-	DIN, WNr	JIS	AFNOR	BS	GB	ISO
383 A03360	G-AlSi12(Cu) GK-AlSi12(Cu)	AC8A	A-S11UNG A-S12UNG	LM13	ZAlSi12Cu1Mg1Ni1 ZL109	AlSi12Cu

A13320			A-S9GU A-S12UN			
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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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