

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AO9-1 (AO9-1).

Grade :	AO9-1 (AO9-1)
Classification :	Alluminium antifriction alloys
Equivalent grades:	Is absent

Chemical composition in % for grade AO9-1 (AO9-1)

Fe	Si	Ti	Al	Cu	Zn	Sn	Impurity
max 0.5	max 0.7	0.02 - 0.2	87.05 - 91.18	0.8 - 1.2	max 0.25	8 - 10	other 0.1

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

Mechanical properties under T=20°C for grade AO9-1 (AO9-1)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			105-125	70-80	30-35	70-75	750-850	

Brinell hardness for AO9-1 (AO9-1) , annealed	HB 10 ⁻¹ = 29 - 35 MPa
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Limiting operating condition of the material AO9-1 (AO9-1)

Load	Speed	Load * Speed	Temperature
MPa	m/s	MPa * m/s	Grade
29.5	20		120

Technological properties of the material AO9-1 (AO9-1) .

Melting temperature :	228 - 650 °C
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Physical properties for grade AO9-1 (AO9-1)

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				3000		

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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