

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AO3-1 (AO3-1).

Grade :	AO3-1 (AO3-1)
Classification :	Alluminium antifriction alloys
Equivalent grades:	Is absent

Chemical composition in % for grade AO3-1 (AO3-1)

Si	Ni	Al	Cu	Sn
1.7 - 2.1	0.3 - 0.5	92.2 - 95.2	0.8 - 1.2	2 - 4

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

Mechanical properties under T=20°C for grade AO3-1 (AO3-1)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
cast in a metal mould			110		2			

Brinell hardness for AO3-1 (AO3-1) , cast in a metal mould	HB 10 ⁻¹ = 40 - 45 MPa
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Limiting operating condition of the material AO3-1 (AO3-1)

Load	Speed	Load * Speed	Temperature
MPa	m/s	MPa * m/s	Grade
24.5	15		100

Technological properties of the material AO3-1 (AO3-1).

Melting temperature :	228 - 655 °C
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Physical properties for grade AO3-1 (AO3-1)

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				2800		

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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