

Database of Steel and Alloy (Marochnik)

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Characteristics for grade OT4-1 (OT4-1).

Grade :	OT4-1 (OT4-1)
Classification :	Titanium wrought alloy
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Chemical composition in % for grade OT4-1 (OT4-1)

Fe	C	Si	Mn	N	Ti	Al	Zr	O	H	Impurity
max 0.3	max 0.1	max 0.12	0.7 - 2	max 0.05	94.33 - 97.5	1.5 - 2.5	max 0.3	max 0.15	max 0.012	other 0.3

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

Mechanical properties under T=20°C for grade OT4-1 (OT4-1)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet annealed , GOST 22178-76			590		13-25			
Bar, GOST 26492-85	Ø 10 - 150		540		10-12	21-30	400-450	Annealing
Bar, GOST 26492-85			540-735		13-15	24-35	400-450	Annealing
Plate , GOST 23755-79	11 - 150		590-735		8-10	14-18		

Brinell hardness for OT4-1 (OT4-1) ,	HB 10⁻¹ = 197 - 255 MPa
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Technological properties for grade OT4-1 (OT4-1)

Weldability:	without limitations.
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Physical properties for grade OT4-1 (OT4-1)

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	1.1		9.63	4550		1010
100		8	10.47			
200		8	11.3		0.565	
300		9.1	12.14		0.628	
400		9.6	14.24		0.67	

500		9.7	14.65		0.754	
600		9.8	16.32			
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade OT4-1 (OT4-1)

Warning! Indicated both exact and nearest equivalents.

Japan
JIS
ST-A90

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]

Weldability :

- without limitations** - welding is done without heating and subsequent heat treating
limited weldability - welding is possible under heating up to 100-120 grade and subsequent heat treating
hard weldability - obtaining the quality welding needs the additional operations: heating up to 200-300 grade; the heat treating is annealing

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more than 2500 steels and alloys (stainless steel, alloy steel, carbon 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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