

Database of Steel and Alloy (Marochnik)

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Characteristics for grade VT1-0 (BT1-0).

Grade :	VT1-0 (BT1-0)
Classification :	Titanium
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Chemical composition in % for grade VT1-0 (BT1-0)

Fe	C	Si	N	Ti	O	H	Impurity
max 0.25	max 0.07	max 0.1	max 0.04	99.24 - 99.7	max 0.2	max 0.01	other 0.3

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

Mechanical properties under T=20°C for grade VT1-0 (BT1-0)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 22178-76			375		20-30			
Pipe, GOST 24890-81			390-590		15			
Bar annealed , GOST 26492-85			345		15	36-40	500-700	
Bar, GOST 26492-85			355-540		19-20	38-50	500-1000	Annealing
Plate , GOST 23755-79	11 - 60		370-570		13	27		
Plate , GOST 23755-79	60 - 150		295-540		10	24		

Brinell hardness for VT1-0 (BT1-0) ,	HB 10 ⁻¹ = 131 - 163 MPa
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Technological properties for grade VT1-0 (BT1-0)

Weldability:	without limitations.
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Technological properties of the material VT1-0 (BT1-0) .

Melting temperature :	1668 °C
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Physical properties for grade VT1-0 (BT1-0)

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	1.12		18.85	4505	540	

100		8.2			
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Equivalent steels for grade VT1-0 (BT1-0)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England
-	DIN,WNr	JIS	AFNOR	BS
Grade2	3.7034 3.7035 Ti2	CI2	T-40 Ti-P.02	IMI125

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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