

Database of Steel and Alloy (Marochnik)

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Characteristics for grade PT-7M (ПТ-7М).

Grade :	PT-7M (ПТ-7М)
Classification :	Titanium wrought alloy
Equivalent grades:	Is absent

Chemical composition in % for grade PT-7M (ПТ-7М)

Fe	C	Si	N	Ti	Al	Zr	O	H	Impurity
max 0.25	max 0.1	max 0.12	max 0.04	93.69 - 95.9	1.8 - 2.5	2 - 3	max 0.15	max 0.006	other 0.3

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

Mechanical properties under T=20°C for grade PT-7M (ПТ-7М)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet	1 - 2		500-650	450-600	30		1000	
Bar			480-680	380-550	15-25	40	900	

Technological properties for grade PT-7M (ПТ-7М)

Weldability:	without limitations.
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Physical properties for grade PT-7M (ПТ-7М)

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			4490		1080
100		8.8	9.3			1270
200		8.9	10.5		0.625	1400
300		9.2	11.9		0.659	1520
400		9.4	13.3		0.69	
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

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]

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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