

Database of Steel and Alloy (Marochnik)

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Characteristics for grade KH27YU5T (X27Ю5Т).

Grade :	KH27YU5T (X27Ю5Т)
Classification :	Precision alloy with higt electric resistance
Equivalent grades:	Is absent

Chemical composition in % for grade KH27YU5T (X27Ю5Т)

C	Si	Mn	Ni	S	P	Cr	Ce	Ti	Al	Ba	Ca	-
max 0.05	max 0.6	max 0.3	max 0.6	max 0.015	max 0.02	26 - 28	max 0.1	0.15 - 0.4	5 - 5.8	max 0.5	max 0.1	Ca, Ce, Ba - расчет

Mechanical properties under T=20°C for grade KH27YU5T (X27Ю5Т)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band, GOST 12766.2-90			785		10			

Brinell hardness for KH27YU5T (X27Ю5Т) , GOST 12766.1-90	HB 10 ⁻¹ = 200 - 250 MPa
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Technological properties for grade KH27YU5T (X27Ю5Т)

Weldability:	without limitations.
Flakes :	not predisposed
Temper brittleness:	predisposed

Technological properties of the material KH27YU5T (X27Ю5Т) .

Melting temperature :	1510 °C
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Physical properties for grade KH27YU5T (X27Ю5Т)

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				7190		1360
100		15			500	1365
200						1370
300						1375

400						1380
500						1400
600						1400
700						1410
800						1410
900						1420
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

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 / 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 in 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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