

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 08KH16N11M3 (08X16H11M3).

Grade :	08KH16N11M3 (08X16H11M3)
Classification :	High alloy high-temperature steel
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Chemical composition in % for grade 08KH16N11M3 (08X16H11M3)

C	Si	Mn	Ni	S	P	Cr	Mo
max 0.08	max 0.6	1 - 1.5	8.5 - 10	max 0.02	max 0.035	15.5 - 17	1.5 - 2

Mechanical properties under T=20°C for grade 08KH16N11M3 (08X16H11M3)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe		longitudinal	540	220	40	55	1500	
Pipe		dihedral	540	220	35	50	1400	

Technological properties for grade 08KH16N11M3 (08X16H11M3)

Weldability:	without limitations.
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Physical properties for grade 08KH16N11M3 (08X16H11M3)

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	2.14			7900		
100		17.1				
200		17.6				
300		18.1				
400	1.84	18.4				
500	1.75	19				
600		19.3				
700		19.6				
800		19.8				
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 08KH16N11M3 (08X16H11M3)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	European	China	Sweden	Poland	Czechia
-	DIN, WNr	JIS	EN	GB	SS	PN	CSN
316	X5CrNiMo17-12-2	SUS316	1.4401	0Cr17Ni12Mo2	2347	0H17N12M2T	17346

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).
Helpful for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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