

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 15KH1M1F (15X1M1Φ).

Grade :	15KH1M1F (15X1M1Φ)
Classification :	Low alloy high-temperature steel
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Chemical composition in % for grade 15KH1M1F (15X1M1Φ)

C	Si	Mn	Ni	S	P	Cr	Mo	V	Cu
0.1 - 0.16	0.17 - 0.37	0.4 - 0.7	max 0.25	max 0.025	max 0.025	1.1 - 1.4	0.9 - 1.1	0.2 - 0.25	max 0.25

Temperature of critical points for grade 15KH1M1F (15X1M1Φ).

$A_{c1} = 770 - 819$, $A_{c3}(A_{cm}) = 905 - 975$, $A_{r3}(A_{rcm}) = 855 - 908$, $A_{r1} = 775 - 818$

Mechanical properties under T=20°C for grade 15KH1M1F (15X1M1Φ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe		longitudinal	500	320	18	50	500	
Pipe		dihedral	500	320	16	45	400	

Physical properties for grade 15KH1M1F (15X1M1Φ)

T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m ³	J/(kg·Grade)	Ohm·m
20	2.14			7800		
100	2.08	11.2	41.58			
200	2.01	11.7	40.3			
300	1.94	12.5	38.6			
400	1.87	13	36.9			
500	1.77	13.5	32.7			
600	1.69	13.7	34			
700	1.6					
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade 15KH1M1F (15X1M1Φ)

Warning! Indicated both exact and nearest equivalents.

Germany
DIN,WNr
15CrMoV5-10 15CrMoV5-9

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]

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