

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 9KH1 (9X1).

Grade :	9KH1 (9X1)
Substitute:	9X2
Classification :	Alloy tool steel
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Chemical composition in % for grade 9KH1 (9X1)

C	Si	Mn	Ni	S	P	Cr	Mo	W	V	Ti	Cu
0.8 - 0.95	0.25 - 0.45	0.15 - 0.4	max 0.4	max 0.03	max 0.03	1.4 - 1.7	max 0.2	max 0.2	max 0.15	max 0.03	max 0.3

Temperature of critical points for grade 9KH1 (9X1).

$A_{c1} = 745$, $A_{c3}(A_{cm}) = 860$, $A_{r1} = 700$, $M_n = 270$
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Mechanical properties under T=20°C for grade 9KH1 (9X1)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			880	830	12	37	700	Guenching Drawing 500°C,

Brinell hardness for 9KH1 (9X1) (annealing), GOST 5950-2000	HB 10 ⁻¹ = 229 MPa
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Technological properties for grade 9KH1 (9X1)

Weldability:	is not used.
Flakes :	predisposed
Temper brittleness:	weakly predisposed

Equivalent steels for grade 9KH1 (9X1)

Warning! Indicated both exact and nearest equivalents.

Germany	China	Czechia	Austria
DIN, WNr	GB	CSN	ONORM
102Cr6 85Cr7	9CV2	19426	K201

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]

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 ia annealing

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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