

Database of Steel and Alloy (Marochnik)

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[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy -> Tool steel](#)

Characteristics for grade KHVG (XBG).

Grade :	KHVG (XBG)
Substitute:	9XC, XГ, 9XBG, XBCГ, ШХ15СГ
Classification :	Alloy tool steel
Equivalent grades:	Go here

Chemical composition in % for grade KHVG (XBG)

C	Si	Mn	Ni	S	P	Cr	W	Cu
0.9 - 1.05	0.1 - 0.4	0.8 - 1.1	max 0.4	max 0.03	max 0.03	0.9 - 1.2	1.2 - 1.6	max 0.3

Temperature of critical points for grade KHVG (XBG).

$Ac_1 = 750$, $Ac_3(Ac_m) = 940$, $Ar_1 = 710$, $Mn = 210$

Brinell hardness for KHVG (XBG) (annealing), GOST 5950-2000	HB 10 ⁻¹ = 255 MPa
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Technological properties for grade KHVG (XBG)

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

Physical properties for grade KHVG (XBG)

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				7850		380
100		11		7830		
200		12				
300		13		7760		
400		13.5				
500		14				
600		14.5		7660		
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade KHVG (XBG)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	European	Italy	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	South Korea
-	DIN,WNr	JIS	AFNOR	EN	UNI	UNE	GB	SS	BDS	MSZ	PN	STAS	KS

01 T31507	1.2419 105WCr6	SKS2 SKS3 SKS31 SKSA	105WC13 105WCr5 106WCr6 90MCW5	107WCr5	107WCr5KU	105WCr5	CrWMn	2140	ChWG	W9	NWC	105MnCrW11	STS2 STS3 STS31
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Specification :**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 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

[Top](#)

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