

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 50KHG (50XГ).

Grade :	50KHG (50XГ)
Classification :	Spring structural steel
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Chemical composition in % for grade 50KHG (50XГ)

C	Si	Mn	Ni	S	P	Cr	Cu
0.46 - 0.54	0.17 - 0.37	0.7 - 1	max 0.25	max 0.035	max 0.035	0.9 - 1.2	max 0.2

Temperature of critical points for grade 50KHG (50XГ).

$A_{c1} = 750$, $A_{c3}(A_{cm}) = 775$

Mechanical properties under T=20°C for grade 50KHG (50XГ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Rolled stock, GOST 14959-79			1270	1175	7	35		Guenching and drawing

Brinell hardness for 50KHG (50XГ) (annealing) , GOST 14959-79	HB 10 ⁻¹ = 269 MPa
Brinell hardness for 50KHG (50XГ) (without heat treatment) , GOST 14959	HB 10 ⁻¹ = 302 MPa

Technological properties for grade 50KHG (50XГ)

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

Equivalent steels for grade 50KHG (50XГ)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	Bulgaria	Poland	Czechia
-	DIN,WNr	JIS	AFNOR	BDS	PN	CSN
5147	55Cr3	SUP9	45C4	50ChG	50HG	14160
5147H		SUP9A	55C3			
5150						
5150H						
5155						

5155H G51470 G51500						
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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 treeting
limited weldability	- welding is possible under heating up to 100-120 grade and subsequent heat treeting
hard weldability	- obtaining the quality welding needs the additional operations: heating up to 200-300 grade; the heat treeting 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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