

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 20KHN (20XH).

Grade :	20KHN (20XH)
Substitute:	15XP, 20XHP, 18XГТ
Classification :	Alloy structural steel
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Chemical composition in % for grade 20KHN (20XH)

C	Si	Mn	Ni	S	P	Cr	Cu
0.17 - 0.23	0.17 - 0.37	0.4 - 0.7	1 - 1.4	max 0.035	max 0.035	0.45 - 0.75	max 0.3

Temperature of critical points for grade 20KHN (20XH).

$A_{c1} = 735$, $A_{c3}(A_{cm}) = 805$, $A_{r3}(A_{rcm}) = 790$, $A_{r1} = 660$, $M_n = 410$

Mechanical properties under T=20°C for grade 20KHN (20XH)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 4543-71	Ø 15		780	590	14	50	780	Guenching and drawing

Brinell hardness for 20KHN (20XH) (annealing), GOST 4543-71

HB 10 ⁻¹ = 197 MPa

Technological properties for grade 20KHN (20XH)

Weldability:	limited weldability.
Flakes :	predisposed
Temper brittleness:	predisposed

Equivalent steels for grade 20KHN (20XH)

Warning! Indicated both exact and nearest equivalents.

USA	Italy	Sweden
-	UNI	SS
3120	18NiCrMo5	2510

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

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