

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 20KH25N20S2 (20X25H20C2).

Grade :	20KH25N20S2 (20X25H20C2) (X25H20C2 ЭИ283)
Classification :	High alloy high-temperature steel
Equivalent grades:	Go here

Chemical composition in % for grade 20KH25N20S2 (20X25H20C2)

Fe	C	Si	Mn	Ni	S	P	Cr	Mo	W	V	Ti	Cu
46.045 - 56	max 0.2	2 - 3	max 1.5	18 - 21	max 0.02	max 0.035	24 - 27	max 0.3	max 0.2	max 0.2	max 0.2	max 0.3

Mechanical properties under T=20°C for grade 20KH25N20S2 (20X25H20C2)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 5949-75	Ø 60		590	295	35	50		Guenching 1100 - 1150°C, air,
Sheet thin, GOST 5582-75			490		35			Guenching 1050 - 1100°C, Cooling water,

Technological properties for grade 20KH25N20S2 (20X25H20C2)

Temper brittleness:	predisposed
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Physical properties for grade 20KH25N20S2 (20X25H20C2)

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				7720		
100		16.1	15	7680		
200						
300						
400						
500			22			
600		17.8	24			
700		17.8	25			
800		18.1	27	7440		
900		18.5	29	7390		
1000		18.8				
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 20KH25N20S2 (20X25H20C2)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Sweden	Poland	Czechia
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	SS	PN	CSN
310 314 S31400	1.4841 CrNi25-20 X15CrNiSi25-20	SUH310 SUS18 SUSY310	Z12CN25.20 Z15CNS25-20	310S24 314S25	1.4841 X15CrNiSi25-20	X16CrNiSi25-20 X25CN25-20	F.3310 X15CrNiSi25-20	2Cr25Ni20	2376	H25N20S2	17255

X15CrNiSi25-21										
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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 / m²]
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/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).
 Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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