

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 10KH23N18 (10X23H18).

Grade :	10KH23N18 (10X23H18) (0X23H18)
Classification :	High alloy high-temperature steel
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Chemical composition in % for grade 10KH23N18 (10X23H18)

C	Si	Mn	Ni	S	P	Cr	Ti	Cu
max 0.1	max 1	max 2	17 - 20	max 0.02	max 0.035	22 - 25	max 0.2	max 0.3

Mechanical properties under T=20°C for grade 10KH23N18 (10X23H18)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe cooling strain, GOST 9941-81			529		35			
Pipe hot strain, GOST 9940-81			491		37			
Bar, GOST 5949-75	Ø 60		490	196	35	50		Guenching 1100 - 1150°C, air,
Forging, GOST 25054-81			490	196	30-35	40-47		

Brinell hardness for 10KH23N18 (10X23H18) (quenching), GOST 25054-81

HB 10⁻¹ = 179 MPa

Technological properties for grade 10KH23N18 (10X23H18)

Temper brittleness:

predisposed

Physical properties for grade 10KH23N18 (10X23H18)

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				7950		

Equivalent steels for grade 10KH23N18 (10X23H18)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Sweden	Australia
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	SS	AS
310S	1.4842	SUH310	Z12CN25-20	310S16	1.4842	X6CrNi25-20	F.331	0Cr25Ni20	2361	310S
S31000	1.4845	SUS310S		310S24	X8CrNi25-21		X8CrNi25-21			
S31008	X10CrNiSiN21-11		Z12CN26-21	310S94						
S31009	X12CrNi25-20		Z8CN25-20	X8CrNi25-21						
	X12CrNi25-21									
	X8CrNi25-21									
	X9CrNiSiN21-11-2									

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]

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/m ³]
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

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