

Database of Steel and Alloy (Marochnik)

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Characteristics for grade U11A (Y11A).

Grade :	U11A (Y11A)
Classification :	Carbon tool steel
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Chemical composition in % for grade U11A (Y11A)

C	Si	Mn	Ni	S	P	Cr	Cu
1.06 - 1.13	0.17 - 0.33	0.17 - 0.28	max 0.2	max 0.018	max 0.025	max 0.2	max 0.2

Temperature of critical points for grade U11A (Y11A).

$Ac_1 = 730$, $Ac_3(Ac_m) = 810$, $Ar_1 = 700$, $Mn = 200$

Mechanical properties under T=20°C for grade U11A (Y11A)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band annealed	0.08 - 3		750		10			

Brinell hardness for U11A (Y11A) (annealing) ,	HB 10 ⁻¹ = 207 MPa
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Physical properties for grade U11A (Y11A)

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				7810		

Equivalent steels for grade U11A (Y11A)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	Italy	Spain	Sweden	Bulgaria	Hungary	Poland	Romania	Austria
-	DIN,WNr	JIS	AFNOR	BS	UNI	UNE	SS	BDS	MSZ	PN	STAS	ONORM
G51320 T72301	C105W1 C105W2	SK3	C105E2U	BW1B	C100KU	C102	1880	U11A	S111 S112	N10 N10E N11 N11E	OSC11	BOHLERK990

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	- Termal (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]

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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