

Database of Steel and Alloy (Marochnik)

splav.kharkov.com/en

[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Tool steel](#)

Characteristics for grade U10A (Y10A).

Grade :	U10A (Y10A)
Classification :	Carbon tool steel
Equivalent grades:	Go here

Chemical composition in % for grade U10A (Y10A)

C	Si	Mn	Ni	S	P	Cr	Cu
0.95 - 1.09	0.17 - 0.33	0.17 - 0.28	max 0.25	max 0.018	max 0.025	max 0.2	max 0.25

Temperature of critical points for grade U10A (Y10A).

$Ac_1 = 730$, $Ac_3(Ac_m) = 800$, $Ar_1 = 700$, $Mn = 210$

Mechanical properties under T=20°C for grade U10A (Y10A)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band annealed , GOST 2283-79			740		10			
Band cold-worked , GOST 2283-79			740-1180					

Brinell hardness for U10A (Y10A) (annealing) , GOST 1435-99	HB 10 ⁻¹ = 197 MPa
---	-------------------------------

Physical properties for grade U10A (Y10A)

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 U10A (Y10A)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	Czechia	Austria
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	SS	BDS	MSZ	PN	STAS	CSN	ONORM
G51320	1.1545	SK3	C105E2U	BW1B	1.1545	C100KU	C102	T10A	1880	C105U	S101	N10E	OSC10	19191	BOHLERK990
T72301	C105W1	SK4			C105U		F.515			U10A	S102	N11			
W110	C105W2				CT105		F.516			U11A	S111	N11E			
W5															

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/m³]
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

[Top](#)

© 2003 - 2013 All rights reserved. [About program.](#)

The entire risk as to use of the Database of Steel and Alloy (Marochnik) content is assumed by you the user

