

Database of Steel and Alloy (Marochnik)

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Characteristics for grade U9A (Y9A).

Grade :	U9A (Y9A)
Classification :	Carbon tool steel
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Chemical composition in % for grade U9A (Y9A)

C	Si	Mn	Ni	S	P	Cr	Cu
0.85 - 0.94	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 U9A (Y9A).

$A_{c1} = 740$, $A_{c3}(A_{cm}) = 760$, $A_{r1} = 700$, $Mn = 190$

Mechanical properties under T=20°C for grade U9A (Y9A)

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 U9A (Y9A) (annealing) , GOST 1435-99	HB 10 ⁻¹ = 192 MPa
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Equivalent steels for grade U9A (Y9A)

Warning! Indicated both exact and nearest equivalents.

Germany	Japan	France	England	Italy	Bulgaria	Hungary	Poland
DIN, WNr	JIS	AFNOR	BS	UNI	BDS	MSZ	PN
C85W	SK5	C90E2U	BW1A	C90KU	U9A	S91 S92	N9E

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]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more than 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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