



Quality 16MnCr5 (UNI EN 10084)

PROPERTIES AND EMPLOYEMENTS

It is an excellent case-hardening steel that combines a good toughness in the nucleus with an elevated hardness of the case-hardened layer. It can substitute steels with nickel-chromium, it has a medium-low hardenability, for this reason it can guarantee a good resistance for a thickness up to mm 20. Moreover, it has a good machinability at the soft-annealed condition.

CORRESPONDENCE TO INTERNATIONAL DESIGNATIONS

Quality	Europe	Germany		France	Spain	G.B.	USA
	EN	DIN	W.n.	AFNOR	UNE	B.S.	AISI/SAE
16MnCr5	16MnCr5	16MnCr5	1.7131	16MC5			5155

CHEMICAL COMPOSITION % (EN 10084)

Steel designation		Chemical composition								
Symbolic	Numeric	C	Si max	Mn	P max	S	Cr	Mo	Ni	B
16MnCr5	1,7131	0,14 ÷ 0,19	0,40	1,00 ÷ 1,30	0,025	≤ 0,035	0,80 ÷ 1,10	-	-	-
16MnCr5S	1,7139					0,020 ÷ 0,040				

Concentration limits of the elements that are not indicated in the table can be deduced in the en 10020 regulation.



MECHANICAL CHARACTERISTICS (UNI 7846)

Steel quality	Bar's diameter	Tensile testing					Impact strength KCU min
		Unified tensile strength R		Deviation from proportionality R _{p 0,2 min}		Elongation A min	
	mm	N/mm ²	kgf/mm ²	N/mm ²	kgf/mm ²	%	J
16MnCr5	11 (30) (63)	1030÷1370 (740÷1030) (640÷930)	105÷140 (75÷105) (65÷95)	735 (490) (440)	75 (50) (45)	8 (9) (10)	25 (25) (25)

JOMINY HARDENABILITY (EN 10084)

Steel designation		Range limits	HRC hardness measured from the quenched end of the test tube (mm)												
Symbolic	Numeric		1,5	3	5	7	9	11	13	15	20	25	30	35	40
16MnCr5+H	1,7131+H	max	47	46	44	41	39	37	35	33	31	30	29	28	27
16MnCrS5+H	1,7139+H	min	39	36	31	28	24	21	-	-	-	-	-	-	-
16MnCr5+HH	1,7131+HH	max	47	46	44	41	39	37	35	33	31	30	29	28	27
16MnCrS5+HH	1,7139+HH	min	42	39	35	32	29	26	24	22	20	-	-	-	-
16MnCr5+HL	1,7131+HL	max	44	43	40	37	34	32	30	28	26	25	24	23	22
16MnCrS5+HL	1,7139+HL	min	39	36	31	28	24	21	-	-	-	-	-	-	-

USUALLY AVAILABLE EX STOCK

M.T. Coloration	Quality	Heat treatment	Surface
	16MnCr5	Soft-annealed	rolled drawn / peeled h11
	16MnCr5 high machinability	Soft-annealed	rolled peeled