Quality 16NiCr4 (UNI EN 10084)

PROPERTIES AND EMPLOYEMENTS

It is an excellent case-hardening steel, considered by the norm uni EN 10084, it substitutes the 16CrNi4, regulated by the norms UNI 7846 and UNI 8550, it is substantially similar to it, with an average chromium content that is slightly higher. It is probably the most used case-hardening steel in the automotive industry, thanks to the good machinability at the annealing condition and to the aptitude to heat treatment, which resists without relevant deformations. It has a good hardenability with a good strength at the core, up to a thickness or diameter of mm 50.

CORRESPONDENCE TO INTERNATIONAL DESIGNATIONS

Quality	Europe	Germany		France	Spain	G.B.	USA
	EN	DIN	W.n.	AFNOR	UNE	B.S.	AISI/SAE
16NiCrS4	**16NiCrS4**	-	-	-	F1581	637M17	-

CHEMICAL COMPOSITION % (EN 10084)

Steel designation		Chemical composition								
Symbolic	Numeric	C	Si max	Mn	P max	S	Cr	Mo	Ni	B
16NiCr4	**1,5714**	0,13 ÷ 0,19	0,40	0,70 ÷ 1,00	0,025	≤ 0,035	0,60 ÷ 1,00	-	0,80 ÷ 1,10	-
16NiCrS4	**1,5715**					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
16NiCr4	11 (30) (63)	1080÷1470 (830÷1130) -	110÷150 (85÷115) -	835 (590) -	85 (60) -	9 (10) -	30 (32,5) -

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
16NiCr4+HH	1,5714+HH	max	47	46	44	42	40	38	36	34	32	30	29	28	28
16NiCrS4+HH	1,5715+HH	min	42	39	37	33	31	29	27	26	24	22	21	20	20

USUALLY AVAILABLE EX STOCK

M.T. Coloration	Quality	Heat treatment	Surface
	16NiCr4	Soft-annealed	rolled drawn / peeled h11
	16NiCr4 high machinability	Soft-annealed	rolled peeled