

<b>Quality</b>	<b>17NiCrMo6-4</b>
According to standards	<b>EN 10084: 2008</b>
Number	<b>1.6566</b>

## Chemical composition

C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni%	Deviations allowed for analysis product
	max		max	max				
0,14-0,20	0,40	0,60-0,90	0,025	0,035	0,80-1,10	0,15-0,25	1,20-1,50	
± 0.02	+ 0.03	± 0.04	+ 0.005	+ 0.005	± 0.05	± 0.03	± 0.05	

17NiCrMoS6-4 n° 1.6569 S% 0.020-0.040 product deviation ± 0.005%

On request, this steel grade may be supplied with addition of lead (Pb) 0.15-0.35% or sulphur (S) up to 0.10%

## Temperature °C

Hot-forming	Normalizing	Core hardening	Hardening carburiz. surface	Stress-relieving	Intermediate annealing	Carburizing
1100-900	880 air	830-870 oil or polymer salt bath	780-820 oil or polymer salt bath	150-180	650-700 air	880-980 (HRC 62-64)
Soft annealing	Isothermal annealing	Treated to ferrite-perlite microstructure	End quench hardenability test	Pre-heating welding		Stress-relieving after welding
700 air (HB max 229)	850 furnace cooling to 650, then air (HB 179-229)	900-1000 (HB 149-201)	880 water	welding must be carried out on the annealed state and before carburizing		600 furnace cooling MS * core ** carburizing surface 360* 180**
				150-350 <b>Ac1</b>	<b>Ac3</b>	
				730	815	

## Mechanical properties

Mechanical properties for **hot-formed** products according to Stalschlüssel 2007 standard, after hardening 850 °C oil + stress-relieving at 200°C

size mm		Testing at room temperature (longitudinal)					quenching 850 °C oil tempering 200 °C air				
from	to	R min	Rp 0.2	A%	Kcu	HB	dimen.	R	Rp 0.2	A	Kv +20 °C
		N/mm <sup>2</sup>	N/mm <sup>2</sup> min.	min.	J min.	min	mm	N/mm <sup>2</sup>	N/mm <sup>2</sup>	%	J
16	40	1200				359	60	1248	942	13.6	64-52-52
16	40	1000				298					
40	100	900				271					

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size mm		Soft annealing +A +SH <b>Peeled-reeled, ground +SL</b>	Soft annealing +A +C <b>Cold-drawn</b>	Heat treatment for pearlite / ferrite +FP +SH <b>Peeled-reeled, ground +SL</b>	Heat treatment for pearlite / ferrite +FP +C <b>Cold-drawn</b>
from	to	HB max	HB max	HB	HB
5 <sup>a)</sup>	10		275		
10	16		265		
16	40	229	260	149-201	149-250
40	63	229	255	149-201	149-245
63	100	229	255	149-201	149-245

<sup>a)</sup> for thickness < 5 mm, mechanical properties should be agreed before order placement

# 17NiCrMo6-4

EN 10084: 2008 Jominy test HRC grain size 5 min.

mm distance from quenched extremity

mm	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	grades
<b>min</b>	40	40	37	34	30	28	27	26	24	23	22	21			<b>H = normal</b>
<b>max</b>	48	48	47	46	45	44	42	41	38	36	35	34	33		
<b>min</b>	43	43	40	38	35	33	32	31	29	27	26	25	24		<b>HH restricted scatter bands</b>
<b>max</b>	48	48	47	46	45	44	42	41	38	36	35	34	33		
<b>min</b>	40	40	37	34	30	28	27	26	24	23	22	21			<b>HL restricted scatter bands</b>
<b>max</b>	45	45	44	42	40	39	37	36	33	32	31	30	29		

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K. B.S.	RUSSIA GOST	USA AISI/SAE
17NiCrMo6-4			17NiCrMo64			17HGN1M	