Quality	**18CrMo4**	**Case-hardening Steel**	*Technical card*
According to standards	**EN 10084: 2008**		***Lucefin Group***
Number	**1.7243**		*rev. 2018*

Chemical composition

C%	**Si%** max	**Mn%**	**P%** max	**S%** max	**Cr%**	**Mo%**	
0,15-0,21	0,40	0,60-0,90	0,025	0,035	0,90-1,20	0,15-0,25	Product deviations are allowed
± 0.02	+ 0.03	± 0.04	+ 0.005	+ 0.005	± 0.05	± 0.03	

For 18CrMoS4 n° 1.7244 S% max 0,020-0,040 product deviation ± 0.005

Temperature °C

Hot-forming	**Core hardening**	**Tempering +T**	**Carburizing**	**Hardening carburiz. surface**	**Tempering +T**
1150-850	870-910 water, oil, polymer	450-600	880-980	780-820 oil, polymer, b.t.	150-200

Soft Annealing +A	**Annealing +AC**	**Annealing +FP**	**End quench hardenability test**	**Pre-heating welding**	**Stress-relieving after welding**
650-700 cooling 15 °C/h to 600 after air (HBW max 207)	-	- (HBW 140-187)	880 water	200-300 welding must be carried out on the annealed state and before carburizing	500 furnace cooling

Ac_1	**Ac_3**	**Ms**	**Mf**
745	815	420	200

b.t. = salt bath 580-600 °C.

Mechanical properties

Hot-rolled mechanical properties after quenching and stress-relieving. *Only information*

size mm		Testing at room temperature (longitudinal)					
		R	**Rp** 0.2	**A%**	**Z%**	**Kv**	***HB***
from	to	N/mm²	N/mm² min.	min.	min.	J min.	
	11	1030-1320	830	9	-	40	*311-384*
11	25	735-1030	540	10	-	45	*224-311*
25	40	685-930	500	11	-	45	*205-278*

Indicative mechanical properties

Heat treating	**R** N/mm²	**HB**
Normalizing +N	> 700	> 210
Subcritical annealing	< 570	< 169
Spheroidizing +AC	< 570	< 169
Isothermal annealing +I	470-685	141-208

18CrMo4 1.7243 **18CrMoS4** 1.7244 2018 **Jominy test HRC** grain size G 5 min. EN 10084:2008

mm distance from quenched end

	1.5	**3**	**5**	**7**	**9**	**11**	**13**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	
min	39	37	34	30	27	24	22	21	-	-	-	-	-	-	-	**H**
max	47	46	45	42	39	37	35	34	31	29	28	27	26	-	-	

18CrMo4 1.7243 **Forged +QT** UNI EN 10250-3: 2001

size d / *t* mm		Testing at room temperature						
		R	**Rp** 0.2	**A%**	**A%**	**Kv**	**Kv**	***HB***
from	to	N/mm² min	N/mm² min	min (L)	min (T)	J min (L)	J min (T)	*min*
	250/*160*	485-660	275	20	20	50	50	147-200

L = longitudinal T = tangenzial d = diameter *t* = *thickness*

EUROPE EN	**ITALY** UNI	**SPAIN** UNE	**GERMANY** DIN	**FRANCE**	**UK** B.S.	**SWEDEN** SS	**USA** AISI/SAE
18CrMo4	18CrMo4	F 1550		18CD4	708 M 20	-	-