

Quality	54NiCrMoV6	Supply conditions:	<i>Technical card</i>
According to standards	Werkstoff	Annealed HB max 248	Lucefin Group
Number	1.2711	Quenched and Tempered HB 270-320	<i>rev. 2018</i>

Chemical composition

C%	Si%	Mn%	P% max	S% max	Cr%	Mo%	Ni%	V%
0,50-0,60	0,15-0,35	0,50-0,80	0,025	0,025	0,60-0,80	0,25-0,35	1,50-1,80	0,07-0,12

Temperature °C

Hot-forming	Quenching +Q	Quenching +Q	Tempering see table +T
1000-850	heating up to 650, pause, then 830-870 oil, polymer (HRC 52-58)	870-900 air (HRC 44-50)	immediately after quenching minimum 2 cycles
Soft annealing +A	Stress relieving +SR	Stress-relieving must be done after machining and before quenching	Pre-heating welding
660-700 furnace cooling to 150, then air (HB max 248)	670 furnace cooling to 300, then air		350
			Ac1 Ac3
			720 790
			Ms Mf
			280 50

Mechanical and physical properties

Tempering table. Quenching at 880 °C in oil

HB	595	577	543	504	482	455	426	400	371	286
HRC	57	56	54	51.5	50	48	45.5	43	40	30
R N/mm²	2240	2160	2010	1850	1760	1640	1500	1390	1250	950
Tempering to °C	50	100	200	300	350	400	450	500	550	600
Thermal expansion	10 ⁻⁶ · K ⁻¹	▶	12.5	13.1	13.4	13.9	14.0	14.2	14.4	
Modulus of elasticity	long. GPa		215					176	165	
Modulus of elasticity	tang. GPa		82					68	63	
R +QT	N/mm ²		1600				1200	1000	600	
Rp 0.2	N/mm ²		1450				1000	750	350	
R +QT	N/mm ²		1200				950	700	300	
Rp 0.2	N/mm ²		1040				700	500	200	
Specific heat apacity	J/(Kg·K)		460					550	590	
Thermal conductivity	W/(m·K)		35.0					35.6	35.0	
Density	Kg/dm ³		7.80					7.64	7.60	
Specific electric resist.	Ohm·mm ² /m		0.30					0.71	0.84	
Electrical conductivity	Siemens·m/mm ²		3.33					1.41	1.19	
°C			20	100	200	300	400	500	600	700

The symbol ▶ indicates temperature between 20 °C and 100 °C, 20 °C and 200 °C ...

Europe EN	Germany DIN	China GB	Japan JIS	India IS	R. of Korea KS	Russia GOST	USA AISI/SAE
54NiCrMoV6	54NiCrMoV6						

Hot-work tool steel

- good strength and toughness
- excellent wearproof
- suitable for deep engraving
- mean machinability
- applications: *large-sized dies, extrusion press tools, press-forging dies, forming rolls, moulds for plastic industries, drop-forging dies, bending and embossing tools, dies for artificial resins, tools for tube extrusion*