Quality	**55NiCrMoV7**	Supply conditions:	*Technical card*
According to standards	**UNI EN ISO 4957: 2002**	Annealed HB max 248	***Lucefin Group***
Number	**1.2714**	Quenched and Tempered HB 370-410	*rev. 2018*

Chemical composition

C%	Si%	Mn%	P% max	S% max	Cr%	Mo%	Ni%	V%
0,50-0,60	0,10-0,40	0,60-0,90	0,030	0,020	0,80-1,20	0,35-0,55	1,50-1,80	0,05-0,15
± 0.02	± 0.03	± 0.04	+ 0.005	+ 0.005	± 0.05	± 0.04	± 0.07	± 0.02

Product deviations are allowed

Temperature °C

Hot-forming	**Quenching +Q**	**Tempering +T**	**Stress-relieving +SR**	Stress-relieving must be done after machining and before quenching
1050-850	heating up to 700, pause, then 860-870 oil 40 °C, polymer or forced air	immediately after quenching minimum **2** cycles see table	650 furnace cooling to 350, then air	

Soft annealing +A	**Isothermal annealing +I**	**Annealing +TH**	**Pre-heating welding**	**Stress-relieving after welding**
680-700 furn. cooling to 150, then air (HB max 248)	800 furnace cooling to 660, pause, then furnace cooling to 620, then air	760-790 controlled cooling 22 °C/h (HB 183-212)	350	650 furnace cooling

Ac1	**Ac3**	**Ms**	**Mf**
710	770	250	10

Mechanical properties

Tempering table. Quenching at 860 °C in oil

HB	560	512	482	442	421	400	371	336	301
HRC	55	52	50	47	45	43	40	36	32
R N/mm²	2070	1880	1760	1580	1480	1390	1250	1110	1010
Tempering to **°C**	**100**	**200**	**300**	**400**	**450**	**500**	**550**	**600**	**650**

Depending on the depth of machining, the following hardness values are recommended

depth **mm**	20	50	100
HB	371-400	353-381	319-353
HRC	40-43	38-41	34-38

Thermal expansion	$10^{-6} \bullet K^{-1}$	►	12.5	13.1	13.4	13.9	14.0	14.3	14.5
Modulus of elasticity long.	GPa	215				198	176	165	
Modulus of elasticity tang.	GPa	82				76	68	63	
R +QT	N/mm²	**1600**			1350	1200	1000	600	
Rp 0.2	N/mm²	1450			1150	1000	750	350	
R +QT	N/mm²	**1200**			1100	950	700	300	
Rp 0.2	N/mm²	1040			820	700	500	200	
Specific heat capacity	/(Kg•K)	460					550	590	
Thermal conductivity	W/(m•K)	25.5					25.0	24.6	
Density	Kg/dm³	7.86					7.64	7.60	
Specific electric resist.	Ohm•mm²/m	0.30					0.71	0.84	
Electrical conductivity	Siemens•m/mm²	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 …

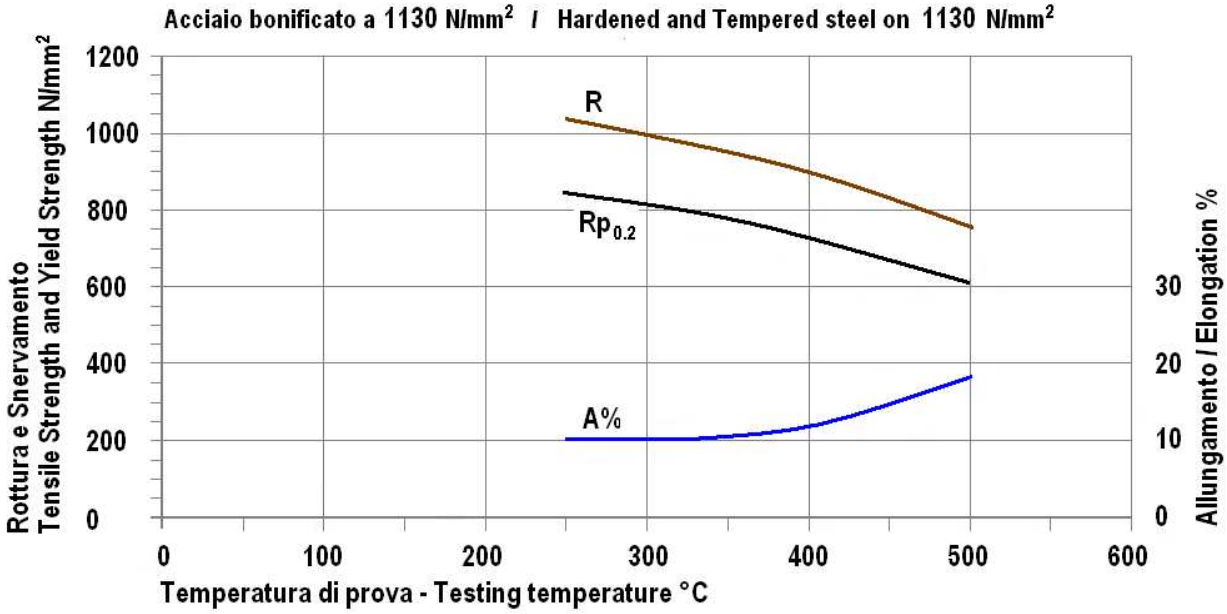
Europe EN	**Germany** DIN	**China** GB	**Japan** JIS	**India** IS	**R. of Korea** KS	**Russia** GOST	**USA** AISI/SAE
55NiCrMoV7	56NiCrMoV7	5CrNiMo	SKT 4	T55Ni7Cr4Mo5V1	STF 4	4ChMNFS	A681 L6

Tool steel for high-working temperatures

- good resistance to thermal shock and heat cracking
- good mechanical characteristics and toughness in hot and cold conditions, high micro-purity level, high structural homogeneity, good suitability for polishing and photo-engraving
- applications: *large-sized die blocks, moulds subject to low pressure, chill moulds for gravity casting, plastic moulds, containers and dies for extrusion, bolsters and injection moulds*

Type L6 ASM Vol. 1 Nominal room-temperature mechanical properties of 1.2714 steel							
Condition		Tensile strength N/mm²	Yield strength N/mm²	Elongation %	Reduction %	Hardness HB	Charpy Kv +20°C J
Annealing +TH		655	380	25	55	200	
Quenching	Tempering						
845 °C olio	315 °C	2000	1790	4	9	543	12
	425 °C	1585	1380	8	20	432	18
	540 °C	1345	1100	12	30	390	23
	650 °C	965	830	20	48	301	81

Mechanical properties at elevated temperature **R 1130 N/mm²**



Mechanical properties at elevated temperature **R 1470 N/mm²**