

Quality	35CrMo7	Supply conditions:	<i>Technical card</i>
According to standards	UNI EN ISO 4957: 2002	Annealed HB max 230	Lucefin Group
Number	1.2302	Quenched and tempered HB ~ 300	<i>rev. 2018</i>

Chemical composition

C%	Si%	Mn%	P% max	S% max	Cr%	Mo%
0,30-0,40	0,30-0,70	0,60-1,00	0,030	0,030	1,50-2,00	0,35-0,55
± 0.03	± 0.03	± 0.04	+ 0.005	+ 0.005	± 0.07	± 0.05

Product deviations are allowed

Temperature °C

Hot-forming	Normalizing +N	Quenching ¹⁾ +Q	Quenching ²⁾ +Q	Tempering ^{1) or 2) +T}	Pre-heating welding	Stress-relieving after welding	
1050-900	850-900 air	840-860 oil or polymer	860-880 air	650-670 air minimum 2 cycles	250-300	600 furnace cooling	
Soft annealing +A	Isothermal annealing +I	Spheroidizing +AC	End quench hardenability test	Ac1	Ac3	Ms	Mf
720-740 calm air (HB max 230)	-	-	-	760	780	340	100

Usually supplied quenched and tempered with hardness value of about 300 HB

Mechanical and physical properties

Table of tempering values at room temperature on round Ø 10 mm after quenching at 860°C in oil

HB	496	482	482	468	461	455	437	421	400	381	353	327	286
HRC	51	50	50	49	48.5	48	46.5	45	43	41	38	35	30
R N/mm ²	1820	1760	1760	1700	1670	1640	1550	1480	1390	1300	1180	1080	950
Tempering at °C	50	100	150	200	250	300	350	400	450	500	550	600	650

Thermal expansion	10 ⁻⁶ • K ⁻¹	▶	12.8	13.0	13.8	14.0	14.2	
Modulus of elasticity long.	GPa		210					
Modulus of elasticity tang.	GPa		80					
Specific heat capacity	J/(Kg•K)		460					
Thermal conductivity	W/(m•K)		33.0					
Density	Kg/dm ³		7.85					
Specific electric resist.	Ohm•mm ² /m		0.19					
Electrical conductivity	Siemens•m/mm ²		5.26					
°C			20	100	200	300	400	500

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

Europe	Germany	China	Japan	India	R. of Korea	Russia	USA
EN	DIN	GB	JIS	IS	KS	GOST	AISI/SAE
35CrMo7	35CrMo7	5CrMnMo					

Cold-work tool steels

- chromium-molybdenum-low carbon steel family is largely used for the manufacturing of medium-sized moulds for the plastic industry
- easily machinable also in its hardened and tempered state; the last peculiarity allows the hardening of complex shape tools, without risks of crack
- particularly suitable for polishing and photo-engraving
- applications: *moulds in general; hard metal roughing cutters*