

Quality	X40Cr14	Supply conditions:	<i>Technical card</i>
According to standards	UNI EN ISO 4957 : 2002	Annealed HB max 241	Lucefin Group
Number	1.2083	Quenched and Tempered HB 300-340	<i>rev. 2018</i>

Chemical composition

C%	Si%	Mn%	P%	S%	Cr%
0,36-0,42	max	max	max	max	12,50-14,50
± 0.03	± 0.05	± 0.04	+ 0.005	± 0.005	± 0.15

Product deviations are allowed

Temperature °C

Hot-forming	Preheating	Quenching +Q	Tempering +T	Tempering +T		
1100-850	850, pause, then ▲	▲ 980-1010 oil or polymer (HRC ~ 55)	180 (HRC 53)	see table		
Soft annealing +A			Pre-heating welding	Stress-relieving after welding		
750-800 slow cooling in furnace (HB max 241)			300	550		
			Ac1	Ac3	Ms	Mf
			845	950	260	50

the symbol ▲ indicates the temperature rise to °C ▲

Tempering table values at room temperature on round of Ø 25 mm after quenching at 1010 °C in oil

HRC	54	53	52	52	52,5	54	52	50	46
R N/mm ²	2010	1950	1880	1880	1915	2010	1880	1760	1520
Tempering at °C	100	200	300	350	400	450	500	550	600

Nitriding in gaseous ammonia. The material should be hardened and tempered before nitriding.

Temperature °C	Time h	Depth of hardening mm	Surface hardness HV
525	20	0,20	1000
525	30	0,30	1000
525	60	0,40	1000

Thermal expansion	10 ⁻⁶ • K ⁻¹	▶	10.5	11.0	11.5	12.0	12.0	
Modulus of elasticity	long. GPa	210	205	198	190	177		
Tensile strength Rm	N/mm ²	1350 ¹⁾	1100 ¹⁾					
Yield stress Rp	N/mm ²	1200 ¹⁾	980 ¹⁾					
Specific heat capacity	J/(Kg•K)	460						
Thermal conductivity	W/(m•K)	16.5	19.8			24.1		
Density	Kg/dm ³	7.80	7.75		7.70			
Specific electric resistivity	Ohm•mm ² /m							
Electrical conductivity	Siemens•m/mm ²	1.5						
°C		20	100	200	250	300	400	500

¹⁾ values obtained on material quenched in oil at 980 °C and tempered at 550 °C

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
X40Cr14	X40Cr14						420 ~

Martensitic stainless steel resistant to corrosion

- good toughness and homogeneous mechanical properties throughout the mould
- good micro-purity level and little segregation
- excellent machinability, suitable for embossing, wear resistance and weldability
- suitable for moulds subject to corrosive plastic materials (PVC, polymers) and humid/salty atmosphere
- applications: *moulds for corrosive plastic materials, synthetic resins and for the automotive industry (head lamp components), moulds for food industry products, cosmetics, rubber pressing, dies and gauges for PVC extrusion*