

Quality	X40Cr14	Supply conditions:
According to standards	EN ISO 4957 : 2002	Annealed or
Number	1.2083	Quenched and Tempered

Chemical composition					
C%	Si%	Mn%	P%	S%	Cr%
	max	max	max	max	
0,36-0,42	1,00	1,00	0,030	0,030	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	Tempering	Tempering
1100-850	850, pause, then ▲	▲ 980-1010 oil or polymer	180 (HRC 53)	see table
Soft annealing			Pre-heating welding	Stress-relieving after welding
750-800 slow cooling in furnace (HB max 241)			300	550
			Ac1	Ms
			845	160

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
N/mm²	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

Modulus of elasticity 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⁾			
Density Kg/dm ³	7.80	7.75		7.70	
Thermal expansion 10 ⁻⁶ • K ⁻¹		10.5	11.0	11.5	12.0
Testing at °C	20	100	200	250	300
				300	400
					500

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

Thermal conductivity	Specific heat capacity				Specific electric resistivity	
	J/(Kg•K)				Ohm•mm ² /m	
W/(m•K)	16.5	19.8	24.1	460	0.65	
°C	20	250	500			

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*