

# MICROFOND BRESCIANA SRL – Acciai di maggiore utilizzo in azienda per MIM



## Chemical composition (%)

## Mechanical properties after treatment<sup>1</sup>

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Title	Wr n.	Italian designation	Chemical composition (%)									Mechanical properties after treatment <sup>1</sup>				Mechanical properties after treatment
			C	Si	Mn	Cr	Ni	Mo	P	S	Altri	Suggested treatment	Suggested treatment	Suggested treatment	Suggested treatment	
Case Hardening	1.0301	C10	0,15 ≤	0,40 max	0,30 0,66	-	-	-	0,045 max	0,045 max	-	Case hardening	450 (≥400)	300 (≥250)	700 HV1	Fair mechanical performance and good weldability. Shafts, axles or components under little stress
Case Hardening	1.6523	8620 (21NiCrMo2)	0,18 0,23	-	-	0,40 0,60	0,40 0,70	0,15 0,25	-	-	-	Case hardening	1100 (≥650)	800 (≥400)	58 HRC	High mechanical and wear performance, good machinability, high surface hardness (case hardened) and core toughness. Mechanical parts subjected to rolling and/or sliding and excellent toughness: cams, pins, rollers, bearings
Case Hardening		FN02	0,1	-	-	-	1,90 2,20	-	-	-	-	Case hardening	550 (≥260)	400 (≥150)		Steel for light-duty uses, mild mechanical characteristics
Heat treatable steel		FN08	0,40 0,80	-	-	-	6,50 8,50	-	-	-	-	Quenching and tempering	1350 (700)	1100 (400)	40 HRC	Good toughness and good machinability. Weldability is fair
Heat treatable steel	1.6565	4340 (40NiCrMo6)	0,35 0,45	-	0,60 0,90	0,90 1,40	1,40 1,70	0,20 0,30	0,035 max	0,02 0,04	-	Quenching and tempering	850-1300	680-1240	20-55 HRC	Excellent mechanical performance. Components subject to high static and dynamic stress: shafts, connecting rods, gears, pistons, joints. 39NiCrMo3 requires fewer precautions in tempering
Heat treatable steel	1.7225	42CrMo4	0,38 0,45	-	-	0,90 1,20	-	0,15 0,30	0,035 max	0,02 0,04	-	Quenching and tempering	1450 (650)	1250 (400)	45 HRC	
Austenitic Stainless steel	1.4404	AISI 316L	0,08 max	1,00 max	2,00 max	16,5 18,5	10,0 13,0	2,00 2,50	0,045 max	0,03 max	-	Solution annealing	510	180		Excellent corrosion resistance. Good corrosion resistance at high temperatures: nautical, food, automotive, chemical, petrochemical, pharmaceutical.
Austenitic-refractory	1.4841	AISI 310	0,20 0,50	1,30 max	1,50 max	24,0 26,0	19,0 22,0	-	0,045 max	0,03 max	1,20≤Nb ≤1,50	Solution annealing	(750)	(400)		Excellent corrosion resistance and high temperatures
Precipitation hardening	1.4542	AISI 630 17-4PH	0,07 max	1,00 max	1,00 max	15,0 17,5	3,00 5,00	-	0,045 max	0,03 max	3,00≤Cu ≤5,00 5xCsNb ≤0,45	Solution annealing and hardening	1100 (950)	950 (550)	38 HRC (20-32 HRC)	It combines excellent mechanical performance with good corrosion resistance. Military and aeronautical
Martensitic Stainless steel	1.4021	AISI 420 A	0,18 0,30	1,00 max	1,00 max	12,0 14,0	-	-	0,045 max	0,03 max	-	Quenching and tempering	1550	1300	48 HRC	Fair corrosion resistance but excellent mechanical performance. Blades and knives
Martensitic Stainless steel	1.4125	AISI 440 Nb	0,96 1,25	1,00 max	1,00 max	16,0 18,0	0,60 max	0,75 max	0,045 max	0,03 max	2,5≤ Nb ≤3,5	Quenching	750-950	550	60 HRC	Fair corrosion resistance but excellent mechanical performance . Scissors, scalpels, engine injectors
Ferritic Stainless steel	1.4016	AISI 430	0,08 max	1,00 max	1,00 max	15,5 17,5	-	-	0,045 max	0,03 max	-	Annealing	350	250	125 HV10	Good resistance to atmospheric corrosion and wear resistance
Bearing steel	1.3505	100Cr6	0,90 1,05	-	-	1,35 1,65	-	-	-	-	-	Quenching and distension	1220-1580	960-1240	30-60 HRC	Components subjected to wear and abrasion, as well as traction and compression. Slewing rings, spheres, rollers
Tool steel	1.3342	AISI M2	0,95 1,05	-	-	3,80 4,50	-	4,50 5,50	-	-	5,50≤W ≤6,75 1,75≤ V ≤2,20	Quenching and tempering	(≥ 1200)	(≥ 800)	50-60 HRC	Cold work steel with good wear resistance, good cutting resistance and high hardness

1) The values in brackets refer to the approximate mechanical properties of the parts as sintered, without any heat treatment applied.

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