

# Materials in the MIM process

## Tempered steels



Material specification	Alloy composition (wt %)	Condition	YS (0,2%) (MPa)	UTS (MPa)	Elongation (%)	Hardness	Tightness g/cm <sup>3</sup> (min.)	Comments
MIM 4605	Ni 1.5 - 2.5% Mo 0.75% max C 0.3 - 0.6% Fe Balance	sintered	500	700	11	70 - 100 HRB	7.50	-
		heat-treated-UTS	1425	1620	3	45 - 50 HRC		
MIM 4630 (modifiziert)	Ni 6 - 8% Mo 0.5% max C 0.2 - 1.5% Fe Balance	sintered	600	700	13	25 - 30 HRB	7.50	-
		heat-treated	960	1180	10	35 - 40 HRC		
MIM 4340	Ni 1.5 - 2.5% Cr 0.75 - 1.25 Mo 0.75% Max C 0.3 - 0.6% Fe Balance	sintered	500	700	11	70 - 100 HRB	7.50	-
		heat-treated	1400	1620	3	45 - 50 HRC		
MIM 4140	Ni 0.75 - 1.25% Cr 0.75 - 1.25 Mo 0.75% Max C 0.3 - 0.6% Fe Balance	sintered	625	825	9	70 - 100 HRB	7.50	-
		heat-treated	820	1405	5	45 - 50 HRC		
MIM 52100	Ni 0.5% max Cr 1 - 1.6% Mo 0.5% Max C 0.90 - 1.2% Fe Balance	sintered	1000	1250	5	25 - 30 HRC	7.50	-
		heat-treated	1100	1500	4	60 - 65 HRC		

# Materials in the MIM process

## Case-hardened steels



Material specification	Alloy composition (wt %)	Condition	YS (0,2%) (MPa)	UTS (MPa)	Elongation (%)	Hardness	Tightness g/cm <sup>3</sup> (min.)	Comments
MIM 4600 (MIM 2200)	Ni 1.5 - 2.5% Mo 0.75% max C 0.15% max Fe Balance	sintered	140	310	40	45 - 65 HRB	7.50	can be case-hardened to achieve a surface hardness of 600 - 750 HV 1
MIM 4600 (modifiziert) (MIM 2700)	Ni 6 - 8% Mo 0.5% max C 0.15% max Fe Balance	sintered	265	410	25	70 - 90 HRB	7.60	-
		heat-treated	450	900	10	500 - 600 HRB		
MIM 8620	Cr 0.5 - 1% Ni 0.5 - 1% Mo 0.5% max C 0.2% max Fe Balance	sintered	210	445	30	45 - 65 HRB	7.50	can be case-hardened to achieve a surface hardness of 600 - 750 HV 1