



MIM Material Properties



MIM materials application

Material	Chemical composition (%)	Density (g/cm3)	Tensile strength (Mpa)	Yield strength (Mpa)	Ductility (%)	Hardness	Coefficient of thermal expansion ($\mu\text{m/m} \cdot ^\circ\text{C}$)	Heat Transfer Coefficient (W/m.k)	Magnetic (μ)
Stainless Steel 17-4 PH	Fe-16Cr-4Ni-4Cu	>7.60	>1000	>750	>8	HRC 25~30	N/A	N/A	N/A
Stainless Steel (HT)* 17-4 PH	Fe-16Cr-4Ni-4Cu	>7.60	1150	1000	>5	HRC 35~42	N/A	N/A	N/A
Stainless Steel (Non-magnetic) 17-4 PH	Fe-16Cr-4Ni-4Cu	>7.60	>800	>450	>25	HV190~210	N/A	N/A	<1.020u
Heat resistant steel HK30	Fe-25Cr-20Ni	>7.60	>600	>250	>30	HV 160+/-35	N/A	N/A	N/A
Superalloy 713C	Ni-12Cr-6Al-4Mo	>7.70	>1220	>750	>12	HRC 30~36	N/A	N/A	N/A
Superalloy(HT)* 713C	Ni-12Cr-6Al-4Mo	>7.70	>1250	>840	>8	HRC 35~42	N/A	N/A	N/A
Stainless Steel 440C	Fe-18Cr-Mo-1.0C	>7.57	>600	>400	>2	<25 HRC	N/A	N/A	N/A
Stainless Steel (HT)* 440C	Fe-18Cr-Mo-1.0C	>7.57	>1700	>1500	<1	60 $\pm$ 2 HRC	N/A	N/A	N/A
Iron-Nickel-Cobalt-Alloy Kovar (ASTM F-15)	Fe-29Ni-17Co	>7.98	-	-	-	HV 150+/-20	5.04 (RT~400°C)	N/A	N/A
Iron-Nickel-Cobalt-Alloy(HIP) Kovar (ASTM F-15)	Fe-29Ni-17Co	>8.15	-	-	-	HV 150+/-20	5.04 (RT~400°C)	N/A	N/A



Material	Chemical composition (%)	Density (g/cm3)	Tensile strength (Mpa)	Yield strength (Mpa)	Ductility (%)	Hardness	Coefficient of thermal expansion (μm/m · °C)	Heat Transfer Coefficient (W/m.k)	Magnetic (μ)
Iron-nickel alloy Fe-2Ni	Fe-2Ni-0.5C	>7.60	>600	>250	≥10	HRB 50~100	N/A	N/A	N/A
Iron-nickel alloy (HT)* Fe-2Ni(POM-base)	Fe-2Ni-0.5C	>7.60	> 1600	>1450	≥2	HRC 47± 3	N/A	N/A	N/A
Stainless Steel 316L	Fe-17Cr-12Ni-2Mo-2Mn	>7.7	>510	>220	>45	HRB 50~100	N/A	N/A	N/A
Stainless Steel (HT)* PANACEA	17Cr3Mo10Mn	>7.50	>1050	>650	>25	HV265+/-35	N/A	N/A	<1.02
Cobalt-chrome-molybdenum alloy F75	Co-base 30Cr6Mo	>7.95	>750	>650	>8	HRC31+/-2	N/A	N/A	≤1.01μ
Ni-chrome-molybdenum alloy Steel 8620	Fe-0.6Ni-0.5Cr-0.2Mo	>7.57	>390	>230	>23	HV 125+/-20	N/A	N/A	N/A
Ni-chrome-molybdenum alloy Steel (HT)* 8620	Fe-0.6Ni-0.5Cr-0.2Mo	>7.57	1400	N/A	<1.3	Surface Hardness Hv 655 Deep Hardness 1mm Hv550	N/A	N/A	N/A
Cr-Mo Steel 4140	Fe-1Cr-0.2Mo	>7.45	>650	>500	>12	HRB 80~100	N/A	N/A	N/A
Cr-Mo Steel(HT)* 4140	Fe-1Cr-0.2Mo	>7.45	≥ 1600 Mpa ≥ 1250 Mpa	≥ 1400 Mpa ≥ 1000 MPa	≥ 3% ≥ 4%	HRC44-48 HRC34-38	N/A	N/A	N/A
Tool steel SKD11	Fe-12Cr-Mo-1.5C	>7.60	>760	>460	>5	HRC 23~27	N/A	N/A	N/A



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Tool steel (HT)* SKD11	Fe-12Cr-Mo-1.5C	>7.60	>1800	>1500	<1	61 $\pm$ 3 HRC	N/A	N/A	N/A
Maraging steel(as-sintering) Thor	7Cr8Ni8Co6Mo	>7.70	>900	>750	>7	26 $\pm$ 3 HRC	N/A	N/A	N/A
Maraging steel(HT)* Thor	7Cr8Ni8Co6Mo	>7.70	>1650	>1300	>5	48 $\pm$ 3 HRC	N/A	N/A	N/A
Maraging steel((as-sintering) CN21	9Co5Mo9Cr8Ni	>7.70	>900	>750	>7	26 $\pm$ 3 HRC	N/A	N/A	N/A
Maraging steel(HT)* CN21	9Co5Mo9Cr8Ni	>7.70	>1650	>1300	>6	48 $\pm$ 3 HRC	N/A	N/A	N/A
Maraging steel 300M-S1	Fe-2Ni-Mo-W-V-Cr	>7.6	>1000	>800	>9	<HRB 100	N/A	N/A	N/A
Maraging steel(HT)* 300M-S1	Fe-2Ni-Mo-W-V-Cr	>7.6	>2000	>1800	>4.5	<HRC 50	N/A	N/A	N/A
low-alloy steel 1010	Fe-0.1C	>7.60	>300	>220	>35	HRB 50~100	N/A	N/A	N/A
low-alloy steel 4605	Fe-2Ni-Mo-W-V-Cr	>7.7	>700	>500	>10	<HRB 90	N/A	N/A	N/A
low-alloy steel(HT)* 4605	Fe-2Ni-Mo-W-V-Cr	>7.7	>1900	>1750	>6	<HRC 45	N/A	N/A	N/A



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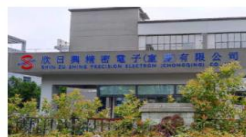


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