

## MIM-Material Specification and Applications

### Composition

**Material:** iron-cobalt, cobalt alloyed steel, soft magnetic

**Standards:** Parmaco CoFe, Fe18Co2.5Cr2VMn

Typical composition::	Element	Content (%)
	C	≤ 0.05
	Co	17.0 – 18.0
	Cr	2.00 – 3.00
	V	1.50 – 2.50
	Mn	1.00 – 2.00
	Si	≤ 0.50
	Fe	Balance
	Other	-

### Properties

	As sintered	HIP
Density	≥ 7.30 g/cm <sup>3</sup>	≥ 7.80 g/cm <sup>3</sup>
Hardness	≥ 160 HV10	≥ 160 HV10
Yield strength R <sub>p0.2</sub>	≥ 320 MPa	≥ 320 MPa
Tensile strength R <sub>m</sub>	≥ 480 MPa	≥ 480 MPa
Elongation A	≥ 24 %	≥ 24 %
Surface quality R <sub>a</sub>	≤ 1.6 μm	≤ 1.6 μm
Saturation polarization J <sub>s</sub>	2.09 T	
Saturation magnetization B <sub>s</sub>	2.14 T	
Coercive force H <sub>c</sub>	230 A/m	
Max. Permeability μ <sub>max</sub>	2500	
Specific electric resistivity	0.65 Ωmm <sup>2</sup> /m	

### Application / remarks

The Parmaco iron-cobalt alloy has a very high saturation polarisation and magnetization. The material is very well suited for applications involving dynamic magnetization changes, such as powerful magnetic actuators with short switching times.