

# MIM-Fe-50Co Injection Molding

Magnetic Alloy Injection Molding

NEWAY PRECISION WORKS

NewayPrecision

[www.newayprecision.com](http://www.newayprecision.com)

## Technical Data: MIM-Fe-50Co Magnetic Alloy

### Product Description

Magnetic Alloy MIM-Fe-50Co injection molding parts possess distinctive properties that make them indispensable in various industries, including Consumer Electronics and Telecommunication. These components exhibit exceptional magnetic performance, boasting a coercivity of up to 1,500 Oe and a magnetic saturation of approximately 16 kG. This high magnetic strength enables them to efficiently store and transmit data, making them ideal for compact, high-performance electronic devices such as smartphones and data storage devices.

Additionally, these parts offer crucial precision in industries demanding intricate designs. With a dimensional accuracy of up to  $\pm 0.3\%$ , they meet stringent component size and shape requirements, enhancing electronic products' overall performance and reliability.

Typical Applications:

- Magnetic Sensors Components
- Miniature Electric Motor Parts
- Telecommunication Devices
- Electronic Lock System



### Chemical Composition

Element	Iron (Fe)	Cobalt (Co)
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Composition (Weight %)	50	50
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### Physical and Mechanical

Alloys	Status	Tensile Strength	Yield Strength	Impact Strength	Hardness	Young's Modulus	Poisson's Ratio	Elongation	Density
		Mpa	Mpa	J	HRC	Gpa	Ratio	% in 25.4 mm	g/cm <sup>3</sup>
MIM-Fe-50Co	As Sintered	750	450	20	45	180	0.3	2.5	7.8

### Typical Properties

#### MIM-Fe-50Co Injection Moulding Magnetic Sensors Components



Magnetic Alloy MIM-Fe-50Co Injection Moulding Parts are exceptionally well-suited for magnetic sensor components due to their unique properties. These components exhibit high magnetic strength, with a coercivity of up to 1,500 Oe and a magnetic saturation of approximately 16 kG. It makes them highly responsive to magnetic fields, ensuring accurate and reliable sensing capabilities. These parts provide precise and consistent results when employed in magnetic sensors, such as those used in automotive speed and position sensing applications.

Furthermore, with a dimensional accuracy of up to  $\pm 0.3\%$ , their precision ensures that magnetic sensor components can be manufactured with the specifications required for optimal performance. This accuracy is paramount in applications where sensor alignment and responsiveness are critical.

### Note

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers. Tel | +86 18926788217 | Web | [www.newayprecision.com](http://www.newayprecision.com) | Contact Neway



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## Typical Properties

### MIM-Fe-50Co Injection Moulding Miniature Electric Motor Parts

Magnetic Alloy MIM-Fe-50Co injection molding parts offer a remarkable solution for enhancing the performance of miniature electric motor components. These parts, crafted with exceptional precision, exhibit a unique combination of magnetic properties and mechanical strength, making them ideal for various applications in the consumer electronics and power tools industries.

One key advantage of MIM-Fe-50Co parts is their high magnetic permeability, which translates to superior magnetic performance in miniature motors. Their precise manufacturing process ensures tight tolerances, crucial for maintaining the required air gap between the rotor and stator in these motors, resulting in efficient energy conversion. The parts' high coercivity also enables them to maintain their magnetic properties even under extreme conditions, ensuring reliable and long-lasting motor operation.



### MIM-Fe-50Co Injection Moulding Telecommunication Devices



Magnetic alloy MIM-Fe-50Co injection molding parts have gained prominence in telecommunications due to their exceptional properties and precise manufacturing. These components, fabricated through Metal Injection Molding (MIM) technology, exhibit remarkable magnetic characteristics, making them ideal for telecommunication devices.

Firstly, the high precision achievable through MIM ensures that critical components in telecommunications, such as connectors and switches, operate flawlessly. With tolerances as tight as  $\pm 0.02$  mm, MIM-Fe-50Co parts guarantee signal integrity and consistent performance. Secondly, the demand for miniaturization in the telecommunications sector has surged. MIM-Fe-50Co enables the production of intricate and compact parts, aligning perfectly with the industry's needs. Its excellent magnetic saturation of 1.7 T contributes to smaller, lightweight components without compromising functionality.

### MIM-Fe-50Co Injection Moulding Electronic Lock System

Magnetic Alloy MIM-Fe-50Co injection molding parts offer remarkable advantages when applied to electronic lock systems, aligning seamlessly with Neway's expertise in injection molding services for locking systems. These components exhibit exceptional precision and high magnetic permeability, making them ideal for various locking mechanisms. Their precision level, boasting tolerances as tight as  $\pm 0.02$  mm, ensures flawless operation in locking systems, where precision is paramount. Moreover, the MIM-Fe-50Co alloy's high coercivity and saturation magnetization enable it to provide robust magnetic forces, which is crucial for secure locking applications.

Furthermore, Neway's proficiency in producing these components ensures cost-effectiveness and rapid prototyping capabilities, making it a valuable choice for lock manufacturers. Regarding electronic lock systems in the locking system industry, Magnetic Alloy MIM-Fe-50Co injection molded parts from Neway exemplify the synergy between cutting-edge materials and precision manufacturing, enhancing security and reliability in diverse applications.



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