

# Magnetic Nano Particles (MNP)

## Raw Material for Magnetic Beads (MB)

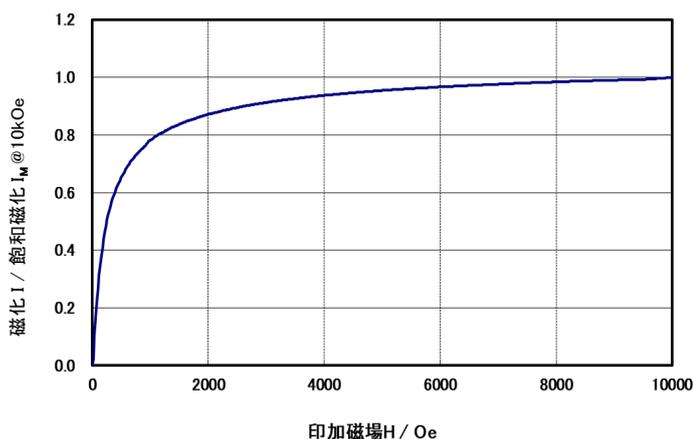
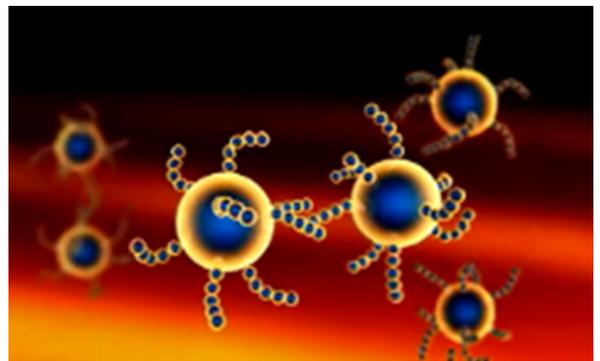
### EMG/PBG Series MNP in Dry-state and Liquid Dispersion

**Compatible with Various Liquid Materials**  
**Very Homogeneous Suspension of MNP**  
**No Remanent Magnetization**  
**For high quality MB without any aggregation**  
**Reliable in Long Term Market Experience**



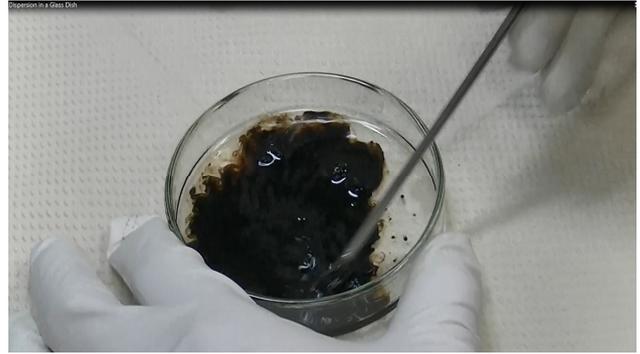
Ferrotec offers Magnetic Nano Particles (MNP) as raw material for Magnetic Beads (MB) for in-vitro biomedical applications. With over 40 years experience in producing ferrofluid which contains nano size magnetic particles, Ferrotec is recognized as a pioneer of high-quality nano size magnetic particle suspensions.

A series of MNP is suited for synthesis of MB used for in-vitro applications like diagnostic purpose. Our MNP are stable iron oxide having about 10nm diameter with various types of surface coating. This technology allows us to propose good solution to mix MNP into target liquid media very well.



The most important is each Micron size bead of MB should not attracted each other. Magnetic materials typically can be magnetized by magnetic field, but our MNP can't be magnetized due to special property named "super-para-magnetics". Zero magnetic hysteresis MNP provides very fine MB without any aggregation.

MNP as liquid dispersion is offered for water/PEG products. Other MNP are supplied as Dry-state for transportation reasons. The dry MNP contain lump of aggregated part, but can be dispersed into media very smooth by right procedure. Of course, we can discuss if liquid dispersion with special package is required.



### PBG Series Ferrofluids

#### Polyethylene Glycol (PEG) Based Ferrofluids for Bio-medical and Other Applications

With the introduction of PBG series ferrofluids, Ferrotec has opened the door to new areas of research previously only hoped for by R&D Professionals. The PBG fluid is composed of PEG coated magnetite nanoparticles with primary particle diameter of 10 nm.

PBG series ferrofluids have the capabilities of high magnetization, high colloidal stability, low nonspecific binding, biocompatible and superparamagnetic properties needed for a multitude of applications.

These formulations have longer life than our EMG series water-based ferrofluids, and offer an alternative to the commercially available water-based ferrofluids produced by other manufacturers. PBG series ferrofluids are available in a wide range of Gauss levels from 66 to 990 with viscosity values 1 to 40 cP.



We have standard MNP for starters. However we also own variety of products with different combination of parameters. Always considering best solution to customers, please consult us freely for your preference.

For very initial trial of MNP, we also have MNP Developer's KIT with good selection of standard products. This can help you initial sorting for the best MNP to proceed real development phase. Ferrotec has long experience to develop custom MNP for target level of MB customer needs.



Table List of Standard MNP / Other Models & Custom Design are available!

EMG1200	Fatty acid coated particles
EMG1300	Polymeric dispersant coated particles
EMG1400	Coated particles having hydrophobic surface
EMG1500	Coated particles having polar surface
EMG607	Water based ferrofluid with cationic surfactant coated particles
EMG707	Water based ferrofluid with anionic surfactant coated particles
PBG100	PEG based ferrofluid with nonionic surfactant coated particles

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