



EMG607

Water based ferrofluid with cationic surfactant coated magnetic-nano particles
MAGNETIC NANO-PARTICLES DEVELOPER KIT for Biomedical application

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TN-EMG607 rev.A



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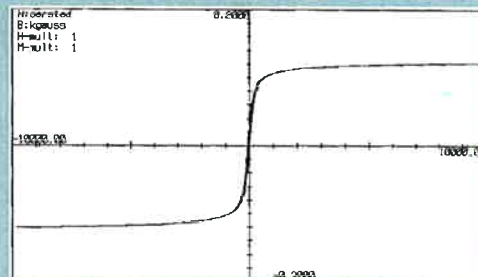
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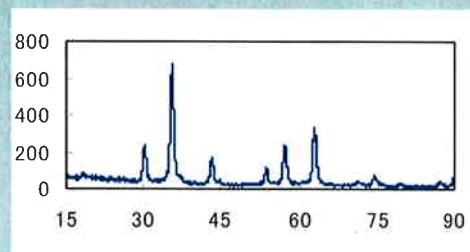
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EMG607 is water based ferrofluid containing magnetic nano particles of iron oxide coated with cationic surfactant. The particles have a nominal diameter of about 10nm having single domain & superparamagnetic property. Therefore no hysteresis on magnetization curve can be seen as a typical data obtained by VSM (Vibrating Sampling Magnetometer). The particles also have magnetic permeability as in table and an initial susceptibility of about 0.4 typically.

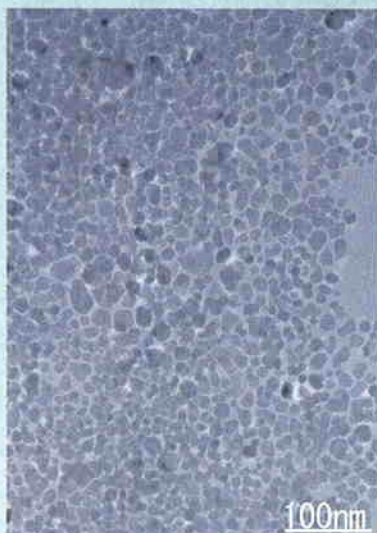


VSM data for typical EMG607

The particles have about 10 nm diameter on average, however some distribution of the size can be seen as a picture of TEM (Transmittance Electron Microscope). A core of the particles are iron oxides and these are well known as compatible with living body.



XRD analysis data for typical EMG607



TEM picture for typical EMG607

Physical properties for EMG607 (specification or typical data)

Appearance	Water based ferrofluid
Saturation magnetization of ferrofluid	9.0~11.0 mT
Average particle size (Typical data)	About 10 nm
Density of ferrofluid at 25C	1.05~1.15 g/cm ³

From the X-ray analysis data by using XRD (X-Ray Diffraction spectroscopy), we can see the iron oxides are the mixture of Fe₃O₄ and gamma-Fe₂O₃.

The particles can be dispersed in carrier solvent in table by just mixing. If the particles can't be dispersed completely, it can be easier by appropriate heating or ultra sound treatment.

Typical solubility property for EMG607

water	methanol	IPA	acetone	MEK	Toluenc	heptane	Xylene
OK	NG	NG	NG	NG	NG	NG	NG

Please feel free to contact Ferrotec if you need technical assistance for the particles.