



MAGNETIC BEADS FOR LIFE SCIENCES RESEARCH AND DIAGNOSTICS

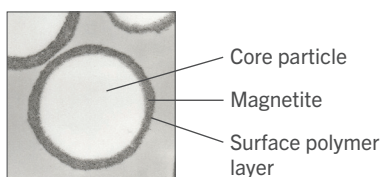
Key Properties

- Core shell structure and uniform particle diameter
- Surface hydrophobic or hydrophilic property
- Low iron exposure
- Higher signal
- Faster magnetic response

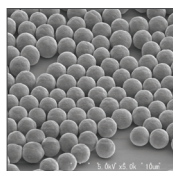
Core-shell Structure and Uniform Bead Size

Magnosphere™ magnetic beads consist of a core particle, a magnetite layer and a surface polymer layer. Controlled size of the core particle ensures uniform particle size.

TEM cross section of Magnosphere™

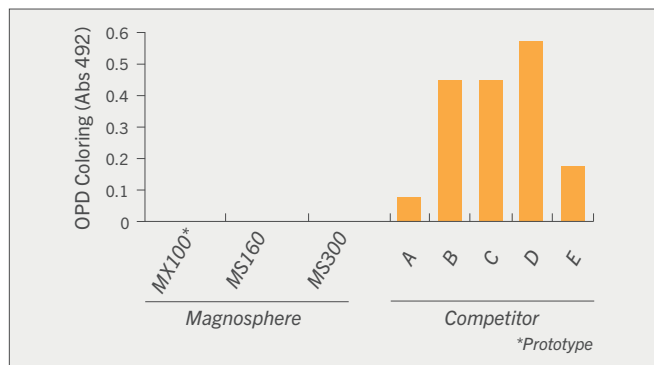


SEM image of Magnosphere™



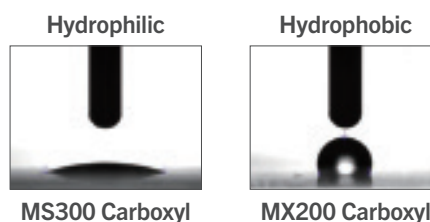
No Iron Oxide Exposure

Magnetic particles were incubated with o-phenylenediamine (OPD) and H₂O₂. OPD coloring was measured to estimate the influence of iron oxide exposure on the immunoassay.



Various Surface Designs

Photos of water contact angle of the Magnosphere™ magnetic beads layer.

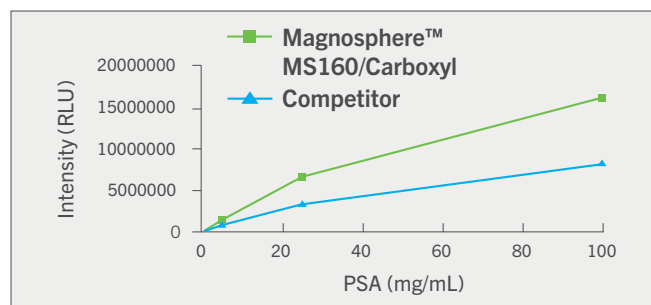


Surface Structure Properties

Magnosphere™	Surface hydrophobicity	Surface polymer composition	Feature
MS series	Hydrophilic	Acrylate Co-polymer resin	Low non-specific binding
MX series	Hydrophobic	Styrene-Acrylate Copolymer resin	Physical adsorption of proteins

Optimal Performance

Chemiluminescence enzyme immunoassay (CLEIA) for prostate specific antigen (PSA) with MS160/Carboxyl.



MAGNOSPHERE™ PRODUCT Lineup

	MS300/ Carboxyl	MS160/ Carboxyl	MS300/ Tosyl	MS160/ Tosyl	MX200/ Carboxyl
Surface	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophobic
Particle Size	3 µm	1.5 µm	3 µm	1.5 µm	2.2 µm
Functional Group Content	10 nmol/mg beads	25 nmol/mg beads	80 nmol/mg beads	150 nmol/mg beads	5 nmol/mg beads
Bead Magnetite Content	20% approx.	25% approx.	20% approx.	25% approx.	35% approx.
Package Volume	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL
Solid Content	10%	10%	10%	10%	10%
Application	Immunoassay/ Bioseparation/ Immunoprecipitation	Immunoassay/ Bioseparation/ Immunoprecipitation	Immunoassay	Immunoassay	Immunoassay

	MS300/ Streptavidin	MS160/ Streptavidin	MS150/ Oglio-dT
Surface	Hydrophilic	Hydrophilic	Hydrophilic
Particle Size	3 µm	1.5 µm	1.5 µm
Functional Group Content	400 pmol/mg Biotin Binding Capacity	600 pmol/mg Biotin Binding Capacity	60 pmol/mg Poly A Binding Capacity
Bead Magnetite Content	20% approx.	25% approx.	25% approx.
Package Volume	10 mL 100 mL	10 mL 100 mL	100 mL
Solid Content	10%	10%	1%
Application	Immunoassay/Immunoprecipitation/MDx/ Immobilization of biotinylated ligands		m-RNA purification

* The values described above are not the specification but the representative value.

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