



## MAGNETIC BEADS FOR LIFE SCIENCE APPLICATIONS

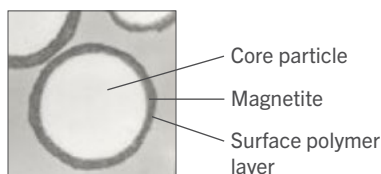
### Key Properties

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

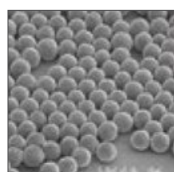
### Core-shell Structure and Uniform Bead Size

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™

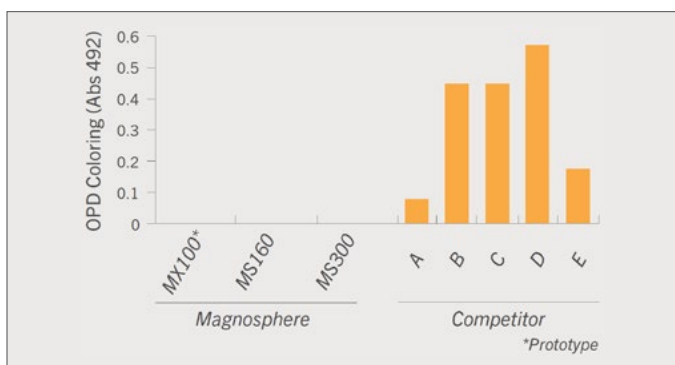


SEM image of Magnosphere™



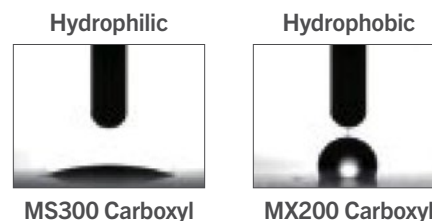
### No Iron Oxide Exposure

Magnetic particles were incubated with o-phenylenediamine (OPD) and H<sub>2</sub>O<sub>2</sub>. 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.

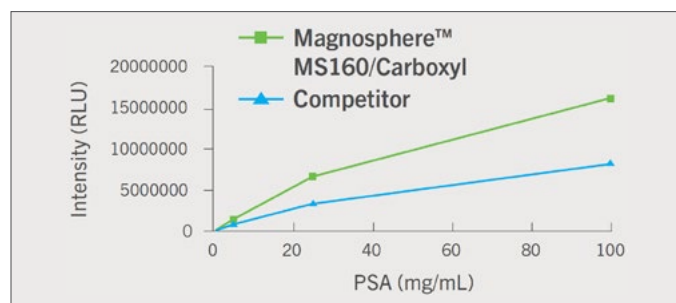


### Surface Structure Properties

Magnosphere™	Surface hydrophobicity	Surface polymer composition	Feature
MS series	Hydrophilic	Acrylate Copolymer 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™ Hydrophilic Product Lineup

	MS300/ Carboxyl	MS160/ Carboxyl	MS300/ Tosyl	MS160/ Tosyl	MS300/ Streptavidin	MS160/ Streptavidin	MS150/ Oligo-dT
Surface	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
Particle Size	3 µm	1.5 µm	3 µm	1.5 µm	3 µm	1.5 µm	1.5 µm
Functional Group Content	10 nmol/mg beads	25 nmol/mg beads	80 nmol/mg beads	150 nmol/mg beads	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.	20% approx.	25% approx.	20% approx.	25% approx.	25% approx.
Package Volume	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL	10 mL 100 mL	100 mL
Solid Content	10%	10%	10%	10%	10%	10%	1%
Application	Immunoassay/ Bioseparation/ Immunoprecipitation	Immunoassay/ Bioseparation/ Immunoprecipitation	Immunoassay	Immunoassay	Immunoassay/Immunoprecipitation/MDx/ Immobilization of biotinylated ligands		m-RNA purification

MAGNOSPHERE™ Hydrophobic Product Lineup

	MX100/ Carboxyl	MX200/ Carboxyl
Surface	Hydrophobic	Hydrophobic
Particle Size	1.1 µm	2.2 µm
Functional Group Content	8 nmol/mg beads	5 nmol/mg beads
Bead Magnetite Content	40% approx.	35% approx.
Package Volume	10 mL 100 mL	10 mL 100 mL
Solid Content	10%	10%
Application	Immunoassay	Immunoassay

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

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