



Estapor[®] Super Paramagnetic Microspheres

A critical raw material for the manufacture of IVD and life sciences reagents



SuperParamagnetic Microspheres



Today, our product portfolio of SuperParaMagnetic Microspheres is very large in terms of size, surface and ferrite content, and based on the well-renowned Estapor® Microspheres.

Our SuperParaMagnetic Microspheres provide powerful tools that help our customers in their success. Our Magnetic Microspheres have the appearance of a dark brown liquid.

Our Magnetic Microspheres are perfectly suited for a large range of applications:

- Solid Phase Immunoassays
- High Throughput screening
- Cell Sorting
- Nucleic Acids Technology
- Bacteria Detection
- Rapid Tests
- Biosensors
- Microfluidics...

The Estapor® Magnetic Microspheres are, in fact, superparamagnetic materials. As shown in figure 1, the magnetization of the microspheres increases with the applied magnetic field and falls back to zero when the field is removed. Neither hysteresis nor residual magnetization is observed and that provides the end use two very practical advantages:

- When the field is removed, the microspheres demagnetize and redisperse easily. This property allows efficient washing steps, low background and good reproducibility.
- The behaviour of the microspheres is always the same whatever the magnetization cycles may be. Such behaviour is a key point for automated instrument.

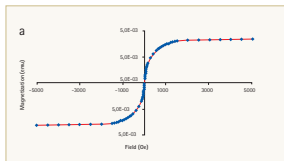


Fig. 1: Five-quadrant Hysteresis Loop (from Laborde R, in 2nd International meeting on the diagnostic applications of magnetic microspheres, June 2003, Paris-France).

Regular SuperParamagnetic Microspheres

Standard Carboxyl-Modified ParaMagnetic Microspheres (-COOH)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
M1-130/12	0,700-1,300	10-15	Polystyrene	80 380 015
M1-180/12	0,900-1,300	10-15	Polystyrene	39 432 084
M1-180/20	0,800-1,200	16-25	Divinylbenzene*	39 433 087
M1-050/20	0,500-0,700	16-25	Polystyrene	39 432 084
M1-070/40	0,700-1,300	35-45	Polystyrene	23 709 083
M1-070/60	0,700-1,300	55-65	Polystyrene	23 711 081

*Cross-linked styrene-divinylbenzene copolymer microspheres are easily redispersible in an organic solvent such as toluene, xylene, chlorobenzene, dichloroethane, methylene chloride and alcohols.



Fig. 2: TEM view of Estapor® SuperParamagnetic Microspheres, reference M1-070/40

Standard Amino-Modified ParaMagnetic Microspheres (-NH₂)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
M2-070/40	1,0-2,0	35-45	Polystyrene	39 575 001
M2-070/60	1,0-2,0	55-65	Polystyrene	80 380 026

SuperParamagnetic Estapor® kits for evaluation

To enable you to test several types of microspheres of different size, surface or ferrite content, we offer you kits of 5 SuperParamagnetic Microspheres. Our evaluation kits of SuperParamagnetic Microspheres consist in 5 vials of 5ml (kit 5 x 5), 5 vials of 10ml (kit 5 x 10) or 5 vials of 50ml (kit 5 x 50).

Small SuperParamagnetic Microspheres

Small Carboxyl-Modified Paramagnetic Microspheres (-COOH)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
M1-030/40	0,300-0,500	30-60	Polystyrene	80 380 000

Our Small COOH-Modified SuperParamagnetic Estapor® Microspheres offer several advantages such as:

- Very High magnetic susceptibility,
- Low Sedimentation,
- Very High surface area,
- Long term stability,
- Good Lot to Lot reproducibility.

Large SuperParamagnetic Microspheres

Large Monosized Carboxyl-Modified ParaMagnetic Microspheres (-COOH)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
M1-200/20	1,700-2,600	15-35	Polystyrene	80 380 001



Fig.3: TEM view of Estapor® SuperParamagnetic Microspheres, reference M1-200/20



Fig.4: Magnetic Separation. Estapor Magnetic Microspheres are compatible with any automated platform using 96-Well plate (right) or manual system using simple tubes (left).

Encapsulated SuperParamagnetic Microspheres

Encapsulated SuperParaMagnetic "EM" microspheres represent the state-of-the-art in the field of magnetic carriers. Developed in 1992 in our laboratories, they are characterized by a core-shell structure. Iron oxide material, encapsulated by a film of polymer, does not interfere with the surface components. Our Encapsulated Microspheres are well known for their:

- Low Non Specific Binding,
- High Binding Capacity,
- Fast magnetic response time (Fig.4),
- Improved colloidal stability
- Fast recovery of dispersion after attraction.

Carboxyl-Modified ParaMagnetic Microspheres (-COOH)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
EM1-100/20	0,900-1,800	15-25	Polystyrene	39 451 080
EM1-100/30	0,900-1,800	26-35	Polystyrene	39 394 082
EM1-100/40	0,900-1,800	36-50	Polystyrene	23 710 087

Amino-Modified ParaMagnetic Microspheres (-NH₂)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
EM2-100/40	0,900-1,800	36-50	Polystyrene	39 572 001

Hydroxyl-Modified ParaMagnetic Microspheres (-OH)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
EM4-100/40	0,900-1,800	36-50	Polystyrene	39 573 001

New Products

Very small Carboxyl-Modified Paramagnetic Microspheres (-COOH)

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
M1-020/50	0,160-0,240	45-60	Polystyrene	80 380 073

Hydrophobic Superparamagnetic Microspheres

Product #	Diameter (µm)	Ferrite %	Polymer	Catalog No
MS-070/40	0,70-1,30	35-50	Polystyrene	80 380 074

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