



Estapor[®] White Microspheres

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

White Microspheres

Standard Estapor® Microspheres

Our standard polystyrene microspheres are extremely uniform (fig.5) with excellent lot-to-lot reproducibility. Those microspheres are mainly devoted to hydrophobic or passive immobilization of molecules (polyclonal or monoclonal antibodies, proteins, haptens etc...) onto their surface.

We offer a large range of size (from 15 nanometers to 6 microns and more), making this range suitable for most Microspheres-based technologies.

- Immuno-Turbidimetric
- Nephelometric Assays
- Enhanced Immuno-Turbidimetric Assays
- Latex Agglutination Test "LAT"
- Solid phase ImmunoAssays
- Microspheres capture ELISA
- Calibration

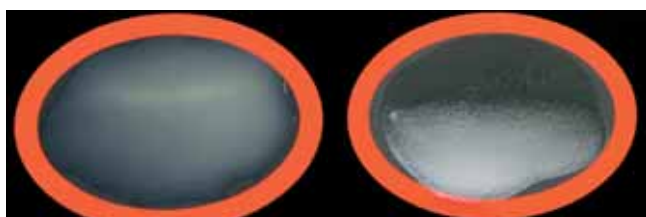


Fig. 1: Latex Agglutination on Slide using white microspheres (reference: K080), left (-), right (+).

Very small Plain Polystyrene Microspheres

Product #	Diameter (µm)	Polymer	Catalog No
K005	<0,050	Polystyrene	39 502 001

Standard Plain Polystyrene Microspheres

Product #	Diameter (µm)	Polymer	Catalog No
K007	0,050-0,075	Polystyrene	39 431 081
K010	0,076-0,125	Polystyrene	39 469 081
K015	0,126-0,175	Polystyrene	27 712 084
K020	0,176-0,225	Polystyrene	39 430 087
K025	0,226-0,275	Polystyrene	23 689 083
K030	0,276-0,325	Polystyrene	23 690 087
K035	0,326-0,375	Polystyrene	39 380 084

K045	0,426-0,475	Polystyrene	39 503 001
K050	0,476-0,575	Polystyrene	23 691 081
K070	0,576-0,740	Polystyrene	23 715 084
K080	0,750-0,890	Polystyrene	23 692 084
K100	0,900-1,100	Polystyrene	23 716 087

Large Plain Polystyrene Microspheres

Product #	Diameter (µm)	Polymer	Catalog No
L200	1,800-2,200	Polystyrene	23 694 081
L300	2,700-3,300	Polystyrene	39 480 080

Functionalized Estapor® Microspheres

Our functionalized polystyrene microspheres are extremely uniform with excellent lot-to-lot reproducibility. The introduction of highly polar or ionisable chemical groups increases the colloidal stability of the suspension and also allows the covalent binding of polyclonal or monoclonal antibodies, proteins and haptens.

The different groups -COOH, -NH₂, -OH, -CONH₂, -SO₃H, -COOCH₃ are produced by copolymerisation of the corresponding functional monomers. Due to their more hydrophilic surface, our functionalized polymer microspheres have a very low grade of non-specific-binding.

The most popular protocols for covalent binding have been carried out with our functionalized Microspheres (see our Estapor® Technical Data Sheets "ETDS", page 15 - Annexe).

We offer a large range of sizes (from 50 nm to 2 µm and more), making this range suitable for most microspheres-based technologies.

Our Estapor® Microspheres are used worldwide in the following applications:

- Immunoturbidimetric and Nephelometric Assays
- Enhanced Immunoturbidimetric Assays
- Latex Agglutination Test "LAT"
- Solid phase ImmunoAssays
- Microspheres capture ELISA

Very small and Standard Carboxyl-Modified Microspheres (-COOH)
Density : 1.059 g/cm³

Product #	Diameter (µm)	Polymer	Catalog No
K1 005	<0,050	Polystyrene	39 504 001
A1 005	0,050-0,075	Styrene-acrylate	39 382 081
A1 010	0,076-0,126	Styrene-acrylate	80 380 018
K1 010	0,130-0,190	Polystyrene	39 491 087
K1 020	0,200-0,260	Polystyrene	39 505 001
K1 030	0,270-0,330	Polystyrene	80 380 014
K1 040	0,35-0,45	Polystyrene	80 380 072
K1 050	0,450-0,530	Polystyrene	39 424 086
K1 070	0,640-0,750	Polystyrene	39 386 084
K1 080	0,760-0,940	Polystyrene	23 696 087
K1 100	0,950-1,100	Polystyrene	39 498 081

Standard Carboxyl-Modified Microspheres (-COOH)

Product #	Diameter (µm)	Polymer	Catalog No
PSI 90-21	0,080-0,150	Polystyrene	80 380 012
PSI 162	0,300-0,500	Polystyrene	80 380 069
PSI 583	0,750-0,900	Polystyrene	80 380 075*

Large Carboxyl-Modified Microspheres (-COOH)

Product #	Diameter (µm)	Polymer	Catalog No
L1 200	2,000-2,600	Polystyrene	39 510 001

Very Small Amino-Modified Microspheres (-NH₂)

Product #	Diameter (µm)	Polymer	Catalog No
K2 005	< 0,050	Polystyrene	80 380 086

Amino-Modified Microspheres (R-NH₂)

Product #	Diameter (µm)	Polymer	Catalog No
K2 080	0,800-0,940	Polystyrene	39 423 083

Standard Amino-Modified Microspheres (Ar-NH₂)

Product #	Diameter (µm)	Polymer	Catalog No
K3 020	0,150-0,200	Polystyrene	39 507 001
K3 025	0,210-0,260	Polystyrene	23 698 084
K3 030	0,260-0,350	Polystyrene	23 705 080
K3 080	0,800-0,940	Polystyrene	39 508 001

Hydroxyl-Modified Microspheres (-OH)

Product #	Diameter (µm)	Polymer	Catalog No
K4 005	<0,050	Polystyrene	80 380 087
K4 030	0,280-0,350	Polystyrene	39 387 087
K4 080	0,800-0,940	Polystyrene	39 388 081

Sulfite-Modified Microspheres (-SO₃H)

Product #	Diameter (µm)	Polymer	Catalog No
K5 015	0,110-0,160	Polystyrene	39 389 084

Quaternary Ammonium-Modified Microspheres [(-CH₃)₃N⁺]

Product #	Diameter (µm)	Polymer	Catalog No
K6 020	0,170-0,230	Polystyrene	39 390 088
K6 100	0,950-1,100	Polystyrene	80 380 088

Chloromethyl-Modified Microspheres (-CH₂Cl)

Product #	Diameter (µm)	Polymer	Catalog No
K9 020	0,170-0,230	Polystyrene	39 509 001
K9 080	0,800-0,940	Polystyrene	39 391 082

Sulfate-Modified Microspheres (-SO₄H)

Product #	Diameter (µm)	Polymer	Catalog No
K11 015	0,110-0,160	Polystyrene	39 506 001

High density COOH-Polystyrene Microspheres

Density: 1.2g/cm³

Product #	Diameter (µm)	Polymer	Catalog No
HD1-010	0,130-0,190	Polystyrene	80 380 002

Low Density Microspheres

Density: 1.02g/cm³

Carboxyl-Modified Microspheres (-COOH)

Product #	Diameter (µm)	Polymer	Catalog No
B1 020	0,175 -0,225	Styrene-butadiene	39 384 087

Amide-Modified Microspheres (-CONH₂)

Product #	Diameter (µm)	Polymer	Catalog No
B7 020	0,175-0,225	Styrene-butadiene	39 392 085

After drying, styrene-butadiene microspheres form a film in which the microspheres coalesce.



Estapor® kits for evaluation

To enable you to test several types of Microspheres of different diameters. Each kit of uncoated Microspheres consists in 5 vials of 5 ml or 10 ml.

- Kit of 5 Plain Estapor®
- Kit of 5 Functionalised Estapor®

Calibration standards (NIST)



This range of Estapor® Calibrated Standards Microspheres is used in scientific and industrial laboratories for the calibration and the standardization of particle measurement systems.

They also can be used in quality control programs and development of new analytical methods in numerous fields.

Principle of measurement:

First ECS sample and Standard Reference Material 1690 or 1691 (NNBS) are mixed together. Then, this preparation observed by Transmission Electron Microscope (TEM) and photo are taken.

These ECS Microspheres have been calibrated according to the recommendations of The National Institute of Standard and Technology (NIST). The average mean microsphere diameter was determined by using TEM (Transmission Electron Microscopy). Initially the size is optically determined via TEM microscopy and then, the real size is obtained by multiplying this value with the effective magnification rate of the microscope when taking the photo.

Our Calibration Standard Microspheres are supplied at 0.5 % concentration in water (50mg/10ml).

Product #	Diameter (µm)	Polymer	Catalog No
ECS 030	0,276-0,325	Polystyrene	39 368 082
ECS 050	0,476-0,575	Polystyrene	39 368 085
ECS 080	0,750-0,890	Polystyrene	39 370 080

Surfactant-Free Polystyrene Microspheres. Density: 1.059 g/cm³

Product #	Diameter (µm)	Polymer	Catalog No
KSF-007	0,070-0,100	Polystyrene	80 380 030
KSF-010	0,101-0,140	Polystyrene	80 380 031
KSF-015	0,141-0,180	Polystyrene	80 380 032
KSF-020	0,181-0,220	Polystyrene	80 380 033

Merck Chimie SAS - France
Estapor® Microspheres,
201, rue Carnot
F-94 126 Fontenay-sous-Bois Cedex
Tel: 33 1 43 94 54 92
Fax: 33 1 43 94 54 96
E-mail: cecile.guignard@merck.fr
Web-site: www.estapor.com

