


# Estapor<sup>®</sup>

## Fluorescent Microspheres

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



**estapor<sup>®</sup>**  
MICROSPHERES

Merck Millipore is a division of  MERCK

# Fluorescent Microspheres

Merck Millipore's photostable fluorescent microspheres have been specifically developed and patented by Estapor® (Figure 1). Made in polystyrene (PS) or in polyvinyltoluene (PVT), our fluorescent microspheres are monodisperse and uniform, ranging in size from 20 nm to 4 µm. Our fluorescent products are also available as plain or functionalized microspheres (COOH, NH<sub>2</sub>, CH<sub>2</sub>Cl...). To prevent dyes leaching and to provide the maximum of active surface, the fluorescent dyes are physically and irreversibly entrapped inside the microspheres.

## Preparation of our fluorescent microspheres comprising:

- Swelling the polymeric microsphere so that fluorescent dyes may enter the microspheres pores.
- Unswelling the polymeric microspheres so that the fluorescent dyes become physically entrapped in the pores.

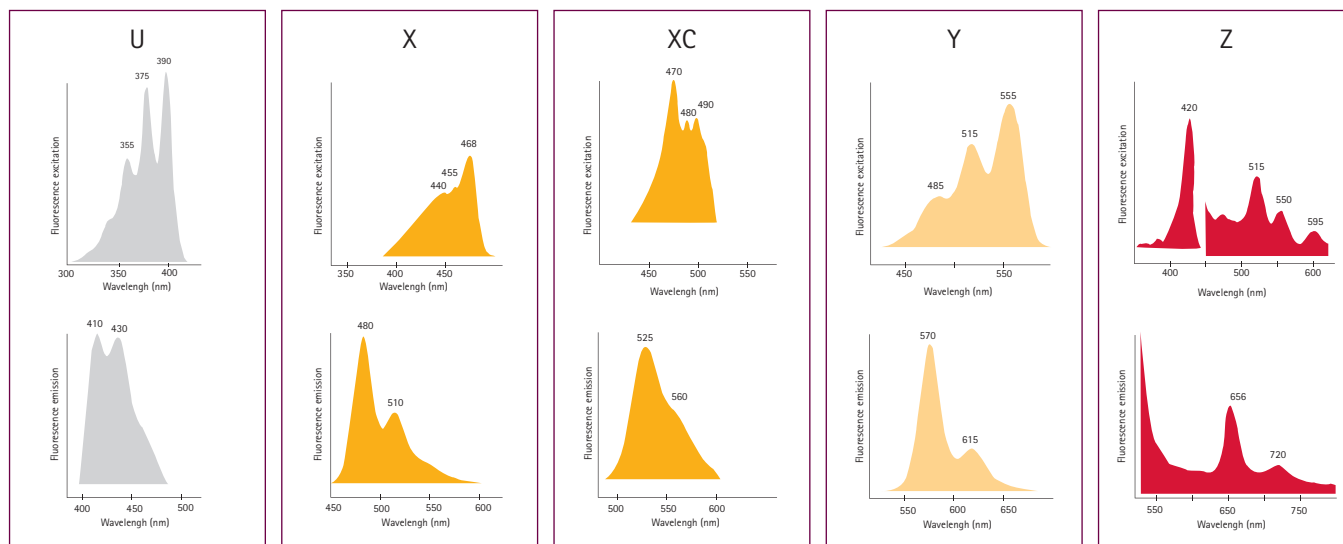
Estapor® fluorescent microspheres are supplied at 1% concentration in water (100 mg/10 ml).

Dye	λ Excitation Wavelength (nm)	λ Emission (nm)	Color
U	Scintillator or eventually photoexcitable at 375		White
X	440, 455, <u>468</u>	<u>480</u> , 510	Yellow
XC	<u>470</u> , 490	<u>525</u> , 560	Yellow
Y	515, <u>555</u>	568, <u>610</u>	Yellow
Z	<u>420</u> , 515, 550	<u>656</u> , 720	Red

Underlined wavelengths represent predominant excitation and emission wavelengths. X is excitable at the 442 nm He-Cd laser line. XC and Y are well suited to the 488 nm and 515 nm bands of the Argon laser.

## The main applications for Estapor® fluorescent microspheres are the following:

- Quantitative lateral flow assays • Multiplexing assays • Membrane-based technologies • Flow cytometry • Confocal microscopy • FLISA: fluorescent linked immuno-sorbent assay
- Toxicology • Cell biology • Microbiology • Embolization
- BioSensors • BioChips • Microfluidics



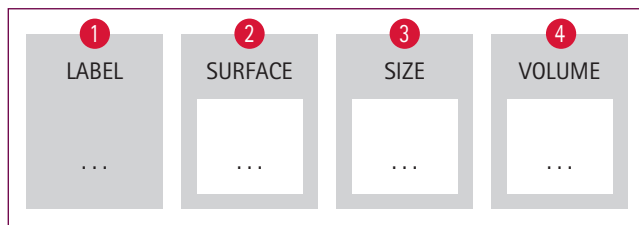
**Figure 1:** Excitation and Emission Spectrum. Estapor Fluorescent Microspheres comprise 5 unique dyes, spanning the visible spectrum from UV (Excitation wavelength = 375 nm / Emission wavelength = 435 nm) to red (Excitation wavelength = 420 nm / Emission wavelength = 660 nm)

## Order information

We offer a very large selection of fluorescent microspheres and we make it very easy for you to order them to meet your particular application.

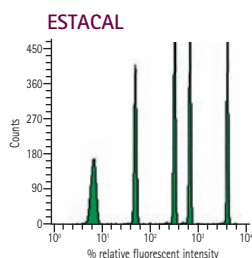
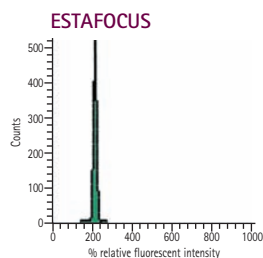
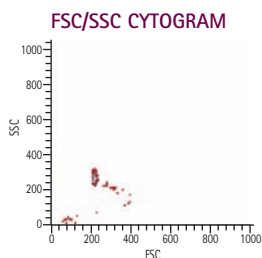
### How to order our fluo microspheres in 4 easy steps?

1. Choose the right fluorescent dye U, X, XC, Y or Z
2. Choose the surface: plain or modified as COOH-, NH<sub>2</sub>-
3. Choose the size: from 20 nm to 10 µm
4. Choose the volume: from 10 ml to bulk quantity.



## Fluorescent standard microspheres for flow cytometer

New types of fluorescent and monodisperse microspheres have been developed and patented. Kits, containing those new products, are designed for the routine calibration and control for flow cytometry. The fluorescent particles have a long term photo-stability and are supplied as ready-to-use reagents.



### ESTAFOCUS

Kit for aligning and focusing flow cytometers

Size of particles : 2 – 2.5 µm  
Argon-ion laser excitation : 488 nm  
Emission range : 500 – 660 nm  
CV<sub>fluorescence</sub> : < 2 %

### ESTACAL

An intensity calibration kit (different beads suspensions of various % relative fluorescent intensities) recommended for calibrating.

Size of particles : 2 – 2.5 µm  
Argon-ion laser excitation : 488 nm  
Emission range : 500 – 660 nm  
CV<sub>fluorescence</sub> : < 4 %

### ESTACOLOR

Kit for aligning flow cytometers at different wavelengths.

λ Excitation (nm)	λ Emission (nm)
360	450
488, 514	585 - 610
360, 488, 514	560 - 670

### Fluorescent Estapor kits for evaluation

To enable you to test several types of microspheres of different size, surface or labels, we offer kits of 5 fluorescent microspheres. Our evaluation kits consist of 5 vials of 10 ml (kit 5 x 10), 5 vials of 50 ml (kit 5 x 50) or 5 vials of 100 ml (kit 5 x 100).

## Custom development of fluorescent microspheres

If you are looking for fluorescent microspheres which are not available from our standard offer, Estapor® microspheres provide custom development for the diagnostic, the biotech and the pharmaceutical industries (Figure 2). Our experience in fluorescent microspheres development allows our technical department to quickly and inexpensively produce custom microspheres to fit your very specific needs. Please send your detailed custom requirements to your Estapor® representative. You don't have to search any further for a potential source of fluorescent microspheres.

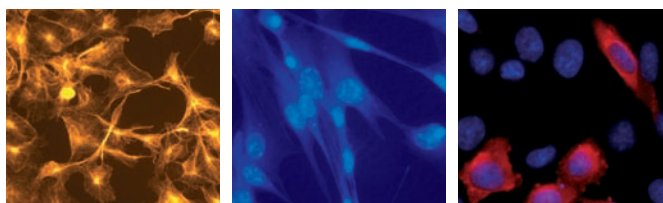


Figure 2: Custom Development of Fluorescent Microspheres

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

*All products are not intended for use as in-vitro diagnostics in terms of European Directive 98 /79 / EC.  
They are for research purposes only, for investigating in-vitro samples without any medical objective.*



For further information on Merck Millipore  
and our products contact:

Merck Chimie SAS - France  
Estapor® Microspheres/OEM Diagnostics group  
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: [estapor.info@merck.fr](mailto:estapor.info@merck.fr)



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