

# Fluorescent Microspheres

A Rainbow of Choices



BEADS • ABOVE THE REST



**Bangs Laboratories' Fluorescent Microspheres provide a versatile platform for research and diagnostic applications.**

## BLI Fluorescent Microspheres

Fluorescent microspheres are a mainstay in diagnostics and life sciences research, finding use as fluorescent markers, assay substrates, and instrument standards. In order to meet the unique performance criteria required of microparticles in these different applications, Bangs Laboratories stocks an extensive array of fluorescent microspheres.

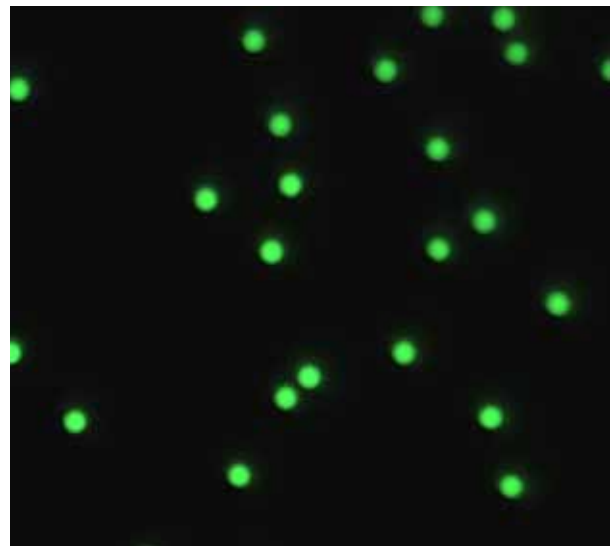
## Internal versus External Labeling

Bangs Laboratories employs two dyeing techniques to fluorescently label microspheres: internal dyeing and surface-labeling. The two techniques produce beads with unique properties, each important for different applications.

Internal dyeing produces very bright and stable particles with typically narrow fluorescent CV's. With this strategy, surface groups remain available for conjugating ligands (proteins, antibodies, nucleic acids, etc.) to the surface of the bead, which is important for analyte-detection and immunoassay applications. Internally-dyed beads are also used extensively in imaging applications, as they display a greater resistance to photobleaching. Most of the fluorescent products in our standard catalog are internally-dyed.

Surface-labeling involves conjugation of the fluorophore to the particle surface, where it is able to interact with the environment, e.g. as do

the fluorophore molecules on a stained cell. The result is a bead standard that exhibits the same excitation and emission properties as stained cell samples under a variety of different conditions, such as buffers at different ionic strength or pH. The "environmentally responsive" nature of surface-labeled microspheres makes them fitting surrogates for biological samples. Externally labeled microspheres are frequently used as controls and standards in flow cytometry applications.



**Figure 1:** 7.3 $\mu$ m Dragon Green microspheres

## STANDARD FLUORESCENT MICROSPHERES

### Fluorescent Polymer

#### Cat. # Product Description

FS02F ≤ 0.49µm

FS03F 0.50-0.99µm

FS04F 1.00-1.99µm

FS05F 2.00-4.99µm

FS06F 5.00-9.99µm

FS07F 10.00-24.99µm

FS08F ≥ 25.00µm

### Fluorescent Carboxyl Polymer

#### Cat. # Product Description

FC02F ≤ 0.49µm

FC03F 0.50-0.99µm

FC04F 1.00-1.99µm

FC05F 2.00-4.99µm

FC06F 5.00-9.99µm

FC07F ≥ 10.00µm

### Applications

Bangs Laboratories has developed fluorescent microspheres for use in a wide range of traditional and emerging applications, such as:

- Flow Cytometry
- Fluorescence Microscopy
- Diagnostics
- Filtration Studies
- Biosensors
- Phagocytosis Studies
- Velocimetry Studies
- Signal Enhancement

We also offer a number of specialty products optimized for performance in unique applications:

- Our **Flow Cytometry Standards** division provides standards for instrument set-up and QC, as well as for quantitative flow cytometry and related applications. See the flow cytometry portion of our website for further product information.
- **QuantumPlex™** is an innovative bead kit designed for **suspension array development**. QuantumPlex allows for detection of up to 10 different analytes per sample or efficient screening of multiple samples. QuantumPlexM provides the added convenience of magnetic separation.
- Our **Fluorescence Intensity Standard kits** for **imaging applications** contain five intensity populations that may serve as relative intensity standards for applications in fluorescence microscopy, or as bright intensity or linearity standards for flow cytometry. As internally-dyed beads, they are highly photostable and will stand up to the rigors of imaging.

### Custom Fluorescent Microspheres

If you do not see a product that meets your specific requirements, please inquire about our capabilities for customization. We offer custom dyeing and protein coating of polymeric and superparamagnetic microspheres, are able to manufacture custom intensities, and can accommodate OEM manufacturing and packaging requirements. See available fluorophores and spectra in the Tech Support portion of our website.



**Bangs Laboratories, Inc.**

**Bangs Laboratories** supplies a large variety of uniform polymeric and silica microsphere products setting the standards for diagnostic, research, and flow cytometry applications. No matter the project, we have a product that serves or we'll work to custom-design a solution to fit. And that's not the half of it.

We also stand behind our products. Regardless of the size of your question or the size of your company, we offer tech support, absolutely free.

**Sound interesting? Give us a call.**



**317.570.7020**