



## DESCRIPTION

Many diagnostic and imaging applications rely on fluorescent microspheres for detection of binding events or signal enhancement. Addressable bead populations may be created with different intensities of fluorescence for the development of multiplexed flow cytometric assays, and small fluorescent spheres can function as reporters for ELISA-type assays. Fluorescent microspheres are also useful for fluid tracing, cell tracking, and phagocytosis studies.

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. Fluorescent microspheres within our standard catalog are internally dyed using a solvent swelling/dye entrapment technique. Bangs offers polystyrene and crosslinked poly(styrene/divinylbenzene) microspheres, as well as magnetic microspheres internally dyed with a variety of fluorescent dyes. Non-functionalized and carboxyl-functionalized surfaces are available to support adsorption and covalent immobilization strategies.

Internal dyeing produces very bright and stable particles with typically narrow fluorescence 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 offer a greater resistance to photobleaching.

Our most common internal fluorophores include:

- Plum Purple (360, 420)
- Glacial Blue (360, 420)
- Dragon Green (480, 520)
- Envy Green (525, 565)
- Flash Red (660, 690)

See spectra and other available fluorophores in our catalog, TechNote 103, *Fluorescent / Dyed Microspheres*, or the technical portion of our website, [www.bangslabs.com](http://www.bangslabs.com). Custom dyeing services are also available.

We also offer externally-labeled microspheres, i.e. with fluorophore attached to the surface. A limited number of surface-labeled beads are also available in our standard catalog, e.g. 1 $\mu$ m FITC surface-labeled. Surface-labeled beads will have fluorescence intensities in the range of labeled biologic samples. For a full listing of our other polymer microspheres, see PDS 732.

## CHARACTERISTICS

**Mean Diameter:** ~50nm - 15.00 $\mu$ m

**Particle Concentration:** 1% solids (10 mg/mL)

## STORAGE AND STABILITY

Store at 2-8°C. Freezing, drying, or centrifuging particles may result in irreversible aggregation and loss of binding activity. Store fluorescent microspheres in their opaque bottles to safeguard against photobleaching. Stable for 12 months from the date of purchase, provided the product is handled in accordance with the manufacturer's recommendations.

## SAFETY

This particle suspension contains sodium azide. Sodium azide may react with lead and copper plumbing to form explosive metal azides. Upon disposal of material, flush with a large volume of water to prevent azide accumulation. Please consult the Safety Data Sheet for more information.

**This product is for research use only and is not intended for use in humans or for *in vitro* diagnostic use.**

## ORDERING INFORMATION

### Cat. Number Dragon Green Fluorescent Polymer

FSDG001	0.05µm Dragon Green
FSDG002	0.20µm Dragon Green
FSDG003	0.50µm Dragon Green
FSDG004	1.00µm Dragon Green
FSDG005	2.00µm Dragon Green
FSDG006	4.00µm Dragon Green
FSDG007	7.5µm Dragon Green
FSDG009	15.00µm Dragon Green
FSDG011	>25.00µm Dragon Green

### Cat. Number Flash Red Fluorescent Polymer

FSFR001	0.05µm Flash Red
FSFR002	0.20µm Flash Red
FSFR003	0.50µm Flash Red
FSFR004	1.00µm Flash Red
FSFR005	2.00µm Flash Red
FSFR006	4.00µm Flash Red
FSFR007	7.5µm Flash Red

### Cat. Number Suncoast Yellow Fluorescent Polymer

FSSY002	0.20µm Suncoast Yellow
FSSY007	7.5µm Suncoast Yellow

### Cat. Number Plum Purple Fluorescent Polymer

FSPP003	0.50µm Plum Purple
FSPP004	1.00µm Plum Purple
FSPP005	2.00µm Plum Purple

### Cat. Number Envy Green Fluorescent Polymer

FSEG004	1.00µm Envy Green
FSEG006	4.00µm Envy Green
FSEG008	10.0µm Envy Green

### Cat. Number Carboxyl Dragon Green Fluorescent Polymer

FCDG001	0.05µm Dragon Green
FCDG002	0.10µm Dragon Green
FCDG003	0.20µm Dragon Green
FCDG004	0.40µm Dragon Green
FCDG005	0.50µm Dragon Green
FCDG006	1.0µm Dragon Green
FCDG008	5.0µm Dragon Green
FCDG009	10.0µm Dragon Green

### Cat. Number Carboxyl Flash Red Fluorescent Polymer

FCFR001	0.05µm Flash Red
FCFR003	0.20µm Flash Red
FCFR004	0.40µm Flash Red
FCFR005	0.50µm Flash Red
FCFR006	1.0µm Flash Red
FDFR008	5.0µm Flash Red

### Cat. Number Carboxyl Surf Green Fluorescent Polymer

FCSG003	0.20µm Surf Green
---------	-------------------

### Cat. Number Carboxyl Glacial Blue Fluorescent Polymer

FCGB003	0.20µm Glacial Blue
FCGB006	1.0µm Glacial Blue
FCGB008	5.0µm Glacial Blue

### Cat. Number Carboxyl Suncoast Yellow Fluorescent Polymer

FCSY006	1.0µm Suncoast Yellow
FCSY007	2.0µm Suncoast Yellow

### Cat. Number Carboxyl Envy Green Fluorescent Polymer

FCEG006	1.0µm Envy Green
FCEG008	5.0µm Envy Green

### Cat. Number Carboxyl Europium Chelate

FCEU001	0.10µm Europium Chelate
FCEU002	0.20µm Europium Chelate
FCEU003	0.30µm Europium Chelate

### Cat. Number Carboxyl Classical Magnetic Fluorescent Polymer

MCDG001	0.9µm Classical Magnetic Dragon Green
MCFR001	0.9µm Classical Magnetic Flash Red

### Cat. Number Carboxyl Encapsulated Magnetic Fluorescent Polymer

MEDG001	0.86µm Encap. Mag. Dragon Green
MEFR001	0.86µm Encap. Mag. Flash Red
MEDG002	1.63µm Encap. Mag. Dragon Green
MESY002	1.63µm Encap. Mag. Suncoast Yellow
MEGB002	1.63µm Encap. Mag. Glacial Blue
MEFR002	1.63µm Encap. Mag. Flash Red

### Cat. Number COMPEL™ Carboxyl Magnetic Fluorescent Polymer

UMGB001	3µm Compel Glacial Blue
UMDG001	3µm Compel Dragon Green
UMEG001	3µm Compel Envy Green
UMFR001	3µm Compel Flash Red
UMGB002	6µm Compel Glacial Blue
UMDG002	6µm Compel Dragon Green
UMFR002	6µm Compel Flash Red
UMGB003	8µm Compel Glacial Blue
UMDG003	8µm Compel Dragon Green
UMFR003	8µm Compel Flash Red

**Standard Sizes available 1, 5, 10, or 100mL**

Order online anytime at [www.bangslabs.com](http://www.bangslabs.com).