

# Spherotech

Let the Possibilities Flow

## SPHERO™ Nanoparticles

Minute Particles , Infinite Possibilities

### Polystyrene Nanospheres

- Sizes as low as 50 nm
- Plain or Color Dyed

### Functionalized Polystyrene Nanospheres

- Sizes as low as 80 nm
- Provide high quality and reproducible results for your application

### Fluorescent Nanospheres

- Sizes as low as 45 nm
- Available with various fluorophores, sizes and fluorescence intensities

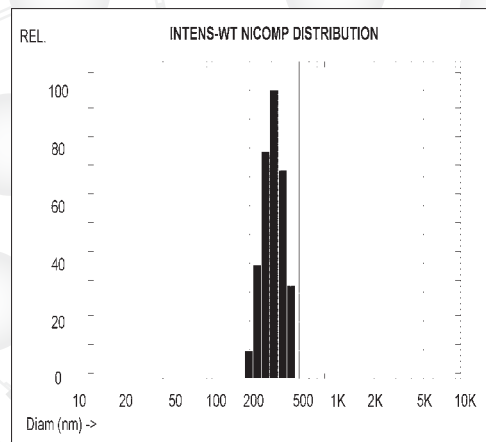
### Nanoparamagnetic Particles

- Sizes as low as 240 nm
- Allow for simple, rapid and reliable biomagnetic separation

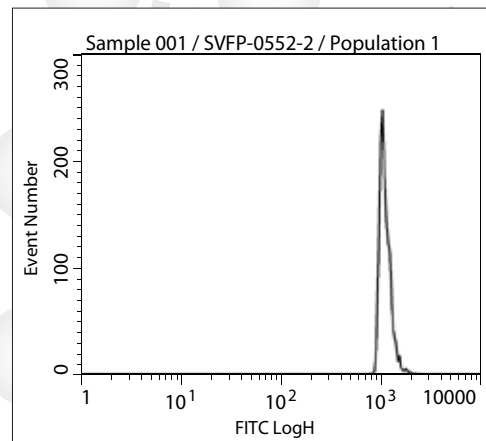
### Coated Polystyrene Nanobeads

- Sizes as low as 300 nm
- Consists of spherical, monodispersed coated surfaces for optimal performance

To learn more about Spherotech Nanoparticles visit us online



Size distribution analysis of 0.3 µm Polystyrene Particles, cat. No. PP-025-10



Histograms of monodispersed 0.5 µm Streptavidin Coated, Yellow Fluorescent Particles

[www.spherotech.com](http://www.spherotech.com)

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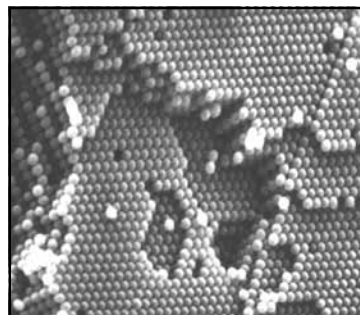
(847) 680-8922 fax (847) 680-8927



## SPHERO™ Nanospheres

### Uses of Sphero™ Nanoparticles include:

- Flow cytometry
- Confocal microscopy
- Immunoassays
- Toxicology
- Cell Biology
- High-throughput analysis
- Microbiology
- Spectroscopy
- BioSensors
- BioChips
- Microfluidics
- Stem cell research



## SPHERO™ Polystyrene Nanospheres

- Uniform Shape and Size
- Multi-liter Capabilities
- Available from 50 nm

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Polystyrene	0.05-0.1	5.0	PP-008-10	10 mL
			PP-008-100	100 mL
Polystyrene	0.2-0.3	5.0	PP-025-10	10 mL
			PP-025-100	100 mL
Polystyrene	0.4-0.6	5.0	PP-05-10	10 mL
			PP-05-100	100 mL

## SPHERO™ Blue Nanospheres

- Excellent for latex agglutination tests
- Enhances the visibility of agglutination
- Available with carboxyl groups for covalent coupling or coated with proteins

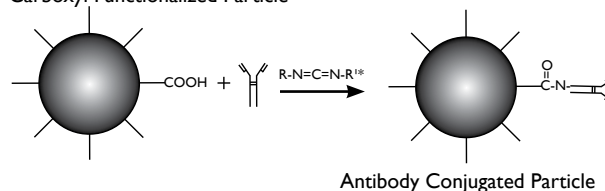
Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Carboxyl Blue	0.03-0.06	5.0	CPB-005-10	10 mL
Carboxyl Blue	0.1-0.19	5.0	CPB-01-10	10 mL
Carboxyl Blue	0.1-0.19	5.0	CPB-01-100	100 mL
Carboxyl Blue	0.2-0.29	5.0	CPB-02-10	10 mL
Carboxyl Blue	0.2-0.29	5.0	CPB-02-100	100 mL
Carboxyl Blue	0.3-0.39	5.0	CPB-03-10	10 mL
Carboxyl Blue	0.3-0.39	5.0	CPB-03-100	100 mL
Carboxyl Blue	0.4-0.6	5.0	CPB-05-10	10 mL
Carboxyl Blue	0.4-0.6	5.0	CPB-05-100	100 mL
Goat anti-Mouse IgG (H&L), Blue	0.3-0.39	0.25	MPB-03-5	5 mL
Streptavidin, Blue	0.3-0.39	1.0	SVBP-03-10	10 mL

## SPHERO™ Functionalized Nanospheres

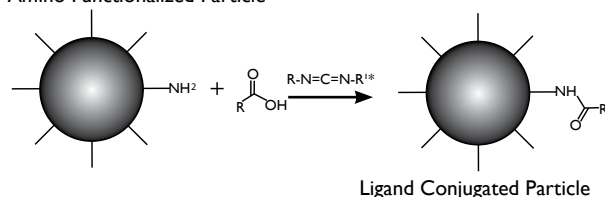
- Provides reactive groups on uniform microparticles for consistent and repeatable coating and binding.
- Suitable for latex agglutination assay, solid phase enzyme immunoassay or solid phase fluorescence immunoassay.

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Carboxyl-polystyrene	0.05-0.1	2.5	CP-008-20	20 mL
			CP-008-200	200 mL
Carboxyl-polystyrene	0.2-0.3	5.0	CP-025-10	10 mL
			CP-025-100	100 mL
Carboxyl-polystyrene	0.4-0.6	5.0	CP-05-10	10 mL
			CP-05-100	100 mL
Amino-polystyrene	0.2-0.3	2.5	AP-025-10	10 mL
			AP-025-100	100 mL
Amino-polystyrene	0.4-0.6	5.0	AP-05-10	10 mL

### Carboxyl Functionalized Particle



### Amino Functionalized Particle

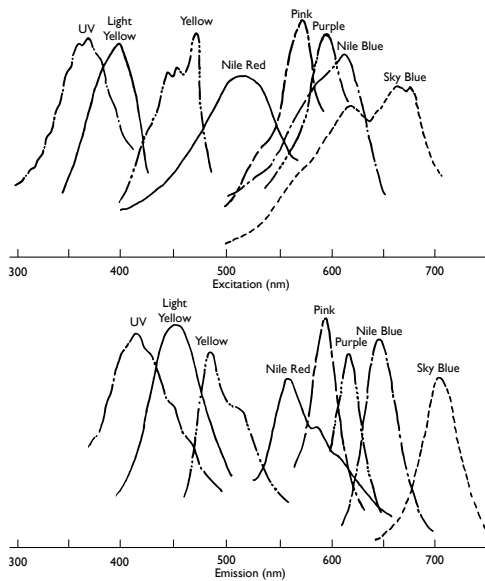


**Figure 1** Examples of carbodiimide-mediated processes for covalent coupling

## SPHERO™ Fluorescent Nanospheres

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Yellow	0.04-0.09	1.0	FP-00552-2	2 mL
Nile Red	0.04-0.06	1.0	FP-00556-2	2 mL
Pink	0.04-0.06	1.0	FP-00558-2	2 mL
Purple	0.04-0.06	1.0	FP-00562-2	2 mL
Sky Blue	0.04-0.09	0.25	FP-00570-2	2 mL
Light Yellow	0.1-0.3	1.0	FP-0245-2	2 mL
Yellow	0.1-0.3	1.0	FP-0252-2	2 mL
Nile Red	0.1-0.3	1.0	FP-0256-2	2 mL
Purple	0.1-0.3	1.0	FP-0262-2	2 mL
Sky Blue	0.1-0.3	0.25	FP-0270-2	2 mL
Light Yellow	0.4-0.6	1.0	FP-0545-2	2 mL
Yellow	0.4-0.6	1.0	FP-0552-2	2 mL
Nile Red	0.4-0.6	1.0	FP-0556-2	2 mL
Pink	0.4-0.6	1.0	FP-0558-2	2 mL
Purple	0.4-0.6	1.0	FP-0562-2	2 mL
Sky Blue	0.4-0.6	1.0	FP-0570-2	2 mL

**Figure 2** Excitation & Emission Spectra of the fluorophores used in SPHERO™ fluorescent particles



## SPHERO™ Multiple Fluorophore Nanosphere

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Multiple Fluorophore	0.1-0.3	0.2	FP-0257-2	2 mL
Multiple Fluorophore	0.4-0.6	0.2	FP-0557-2	2 mL

## SPHERO™ Ultra Rainbow Fluorescent Nanospheres

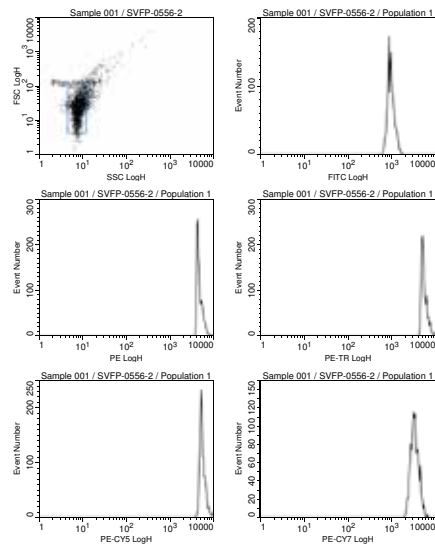
- Excites from UV to NIR

Particle Type and Surface	Size, $\mu\text{m}$	Catalog No.	Unit
Ultra Rainbow Fluorescent, $10^{10}/\text{mL}$	0.1-0.3	URFP-02-2	2 mL
Ultra Rainbow Fluorescent, $10^7/\text{mL}$	0.4-0.6	URFP-05-2	2 mL

## SPHERO™ Functionalized Fluorescent Nanospheres

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Yellow	0.04-0.08	1.0	CFP-00552-2	2 mL
Nile Red	0.04-0.08	1.0	CFP-00556-2	2 mL
Pink	0.04-0.08	1.0	CFP-00558-2	2 mL
Yellow	0.09-0.3	1.0	CFP-0252-2	2 mL
Nile Red	0.09-0.3	1.0	CFP-0256-2	2 mL
Pink	0.09-0.3	0.9	CFP-0258-2	2.2 mL
Purple	0.09-0.3	1.0	CFP-0262-2	2 mL
Yellow	0.4-0.6	1.0	CFP-0552-2	2 mL
Nile Red	0.4-0.6	1.0	CFP-0556-2	2 mL
Pink	0.4-0.6	1.0	CFP-0558-2	2 mL
Purple	0.4-0.6	1.0	CFP-0562-2	2 mL
Sky Blue	0.4-0.6	0.25	CFP-0570-2	2 mL
Yellow	0.09-0.3	1.0	AFP-0252-2	2 mL
Yellow	0.4-0.6	1.0	AFP-0552-2	2 mL
Pink	0.4-0.6	1.0	AFP-0558-2	2 mL

**Figure 3** Histograms of the Nile Red Fluorescent Nano Particles (Cat. No. FP-0556-2) on a Stratadigm S1400



## SPHERO™ Magnetic Nanospheres

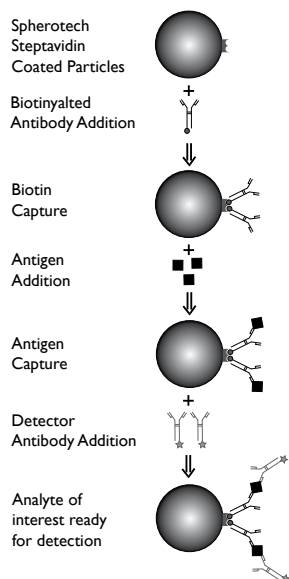
- Available with carboxyl groups for covalent coupling
- Available with streptavidin coating for immobilization of biomolecules such as antibodies and oligos
- Used in magnetic immunoprecipitation and high throughput separations

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Carboxyl Magnetic	0.1-0.39	2.5	CM-025-10	10 mL
Carboxyl Magnetic	0.4-0.69	2.5	CM-05-10	10 mL
Fluorescent Nile Red Carboxyl Magnetic	0.2-0.39	1.0	FCM-02556-2	2 mL
Streptavidin	0.5-0.69	0.5	SVM-05-10	10 mL
Streptavidin, Fluorescent Nile Red	0.2-0.39	0.1	FSVM-02556-2	2 mL

## SPHERO™ Coated Nanospheres

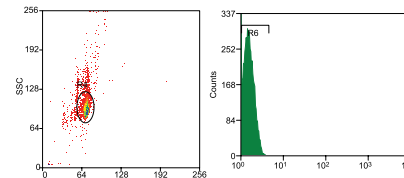
Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Protein G	0.4-0.6	1.0	PGP-05-5	5 mL
Streptavidin	0.3-0.39	1.0	SVP-03-10	10 mL
Streptavidin	0.4-0.6	1.0	SVP-05-10	10 mL
Streptavidin	0.4-0.6	1.0	SVP-05-100	100 mL

**Figure 4** Example of streptavidin coated particles used in an sandwich immunoassay with a biotinylated antibody, antigen and labelled antibody.

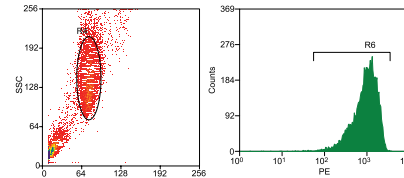


**Figure 5** Histograms of the magnetic separation of Biotin particles after exposure to streptavidin nanomagnetic particles, Nile Red (Cat. No. FSVM-02556-5)

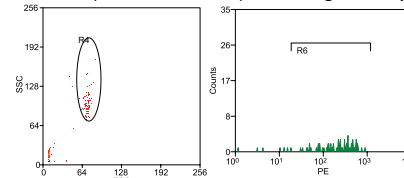
A. Biotin Coated (Cat. No. TP-60-5) before exposure



B. Biotin Coated (Cat. No. TP-60-5) after exposure



C. Biotin Coated (Cat. No. TP-60-5) after magnetic separation



## SPHERO™ Coated Fluorescent Nanospheres

Particle Type and Surface	Size, $\mu\text{m}$	% w/v	Catalog No.	Unit
Biotin, Yellow	0.4-0.6	0.1	TFP-0552-5	5 mL
Biotin, Nile Red	0.4-0.6	0.1	TFP-0556-5	5 mL
Avidin, Yellow	0.4-0.6	0.1	VFP-0552-5	5 mL
Avidin, Pink	0.4-0.6	0.1	VFP-0558-5	5 mL
Avidin, Purple	0.4-0.6	0.1	VFP-0562-5	5 mL
Streptavidin, Yellow	0.4-0.6	0.1	SVFP-0552-5	5 mL
Streptavidin, Nile Red	0.4-0.6	0.1	SVFP-0556-5	5 mL
Protein A, Yellow	0.4-0.6	0.1	PAFP-0552-5	5 mL
Protein A, Nile Red	0.4-0.6	0.1	PAFP-0556-5	5 mL
Protein A, Pink	0.4-0.6	0.1	PAFP-0558-5	5 mL
Protein A, Purple	0.4-0.6	0.1	PAFP-0562-5	5 mL
Protein G, Yellow	0.4-0.6	0.1	PGFP-0552-5	5 mL
Protein G, Nile Red	0.4-0.6	0.1	PGFP-0556-5	5 mL
Protein G, Pink	0.4-0.6	0.1	PGFP-0558-5	5 mL
Protein G, Purple	0.4-0.6	0.1	PGFP-0562-5	5 mL
Goat anti-Mouse IgG (H&L), Yellow	0.4-0.6	0.1	MFP-0552-5	5 mL
Goat anti-Mouse IgG (H&L), Nile Red	0.4-0.6	0.1	MFP-0556-5	5 mL
Goat anti-Mouse IgG (H&L), Purple	0.4-0.6	0.1	MFP-0562-5	5 mL

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