

SPHERO™ Rainbow Calibration Particles

(6 Peaks and 8 Peaks)

Features

- Contain a mixture of fluorochromes that are spectrally similar to fluorochromes used in flow cytometry
- Use fluorochromes encapsulated inside the particles for stability
- Available in dropper bottles for ease of use and convenient storage
- Provide cost efficiency and minimize waste by remaining stable in solution

SPHERO™ Rainbow Calibration Particles are versatile, stable, economical, and convenient to use. These particles contain a mixture of fluorochromes that are spectrally similar to many of the fluorochromes used in flow cytometry. As a result, researchers can use these particles for routine alignment, day-to-day performance verification, and long term performance tracking of several flow cytometer channels in one run. These particles are very stable, since the fluorochromes are encapsulated inside the particles instead of located on the surface. The particles are packaged in a convenient dropper bottle to facilitate dispensing and storage. The diluted particles can be stored for up to 5 days, if desired, to reduce costs.

Description

SPHERO Rainbow Calibration Particles contain a mixture of several similar size particles with different fluorescence intensities. Each particle contains a mixture of fluorophores that allow excitation at any wavelength from 365 to 650 nm. This enables the calibration of all channels (except UV) in the flow cytometer with the same set of particles. The fluorophores used are very stable but not spectrally matched to the commonly used fluorophores such as FITC, PE, or PE-Cy™5. Dilution of a few drops of the particles from the dropper bottle in 1 mL of filtered DI water provides adequate particle concentration for flow cytometer calibration.

Relative number of fluorophores per particle

The relative number of fluorophores per particle has been determined for every peak of the SPHERO Rainbow Calibration particles (Cat. Nos. 556286, 653144, and 559123) in the FL1 (FITC, MEFL), FL2 (RPE, MEPE), FL3 (RPE-Cy5, MEPCY), and FL4 (APC, MEAP) channels of the flow cytometer to plot the calibration graph shown. The calibration graph is used to check the linearity of the PMT in each channel. The relative number of fluorophores can be cross calibrated with cells or particles stained with known numbers of spectrally matching fluorophores such as FITC, PE, and PE-Cy5 to estimate the number of fluorophores on stained cells.

BD Accuri users

Due to the unique design of BD Accuri® flow cytometers, there is no need to align the system or to adjust voltages. Rather, SPHERO 8-peak Rainbow Particles (Cat. No. 653144 or 559123) can be used to validate performance of the FITC, PE, and PE-Cy5 detectors, and SPHERO APC Particles (Cat. No. 653145) can be used to validate the APC channel.

Visit bdbiosciences.com for more information.

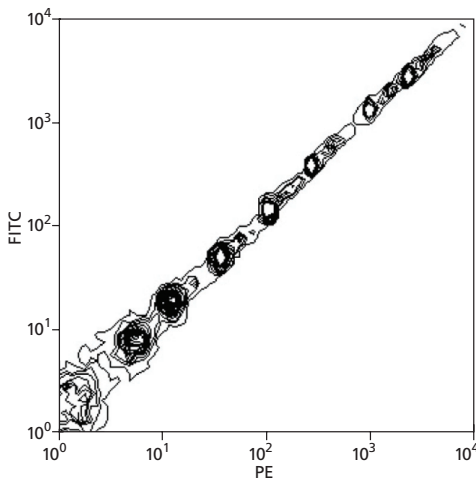


Figure 1. This contour plot displays the bead distributions of the SPHERO Rainbow Calibration Particles in FITC vs PE (Cat. No. 559123 or 653144, 8 peaks).

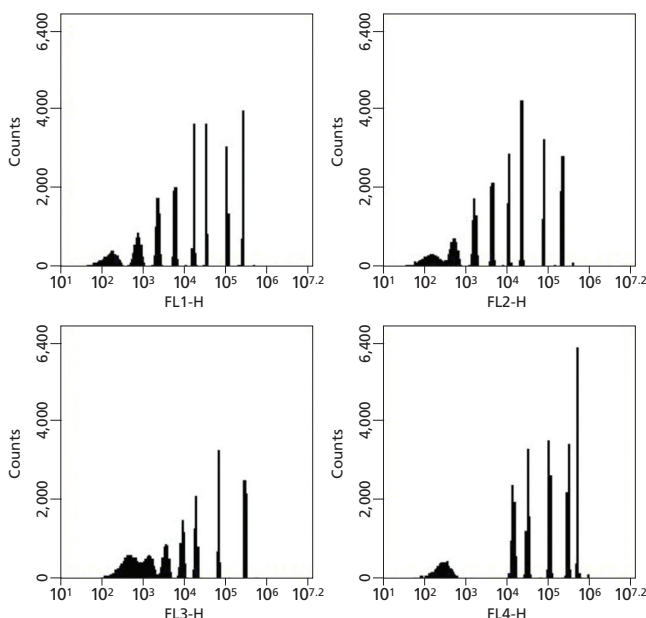


Figure 2. SPHERO 8-peak Rainbow Particles are used to validate performance of the FITC, PE, and PE-Cy5 detectors, and SPHERO APC Particles are used to validate the APC channel for BD Accuri C6 flow cytometers.



SPHERO™ Rainbow Calibration Particles (6 Peaks and 8 Peaks)

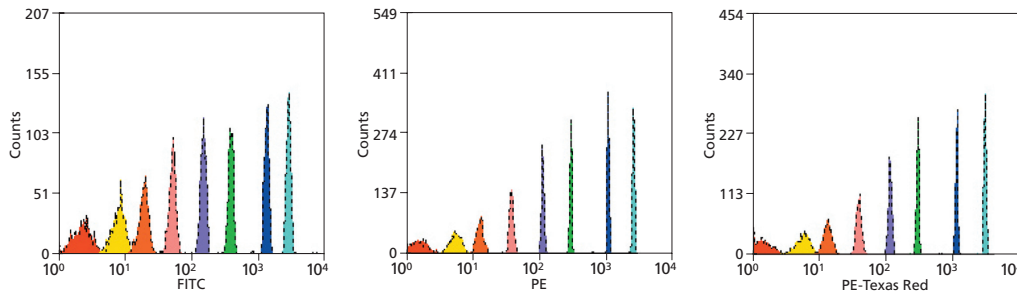


Figure 3. Sample histograms showing individual peaks representing various fluorescence intensities in SPHERO Rainbow Calibration Particles (Cat. No. 559123 or 653144, 8 peaks).

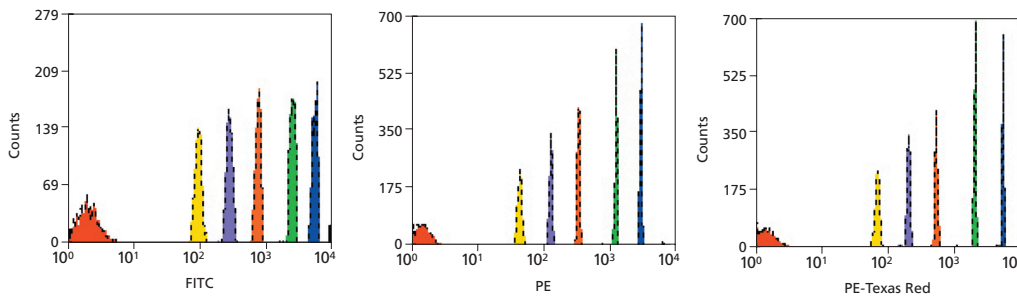


Figure 4. Sample histograms showing individual peaks representing various fluorescence intensities in SPHERO Rainbow Calibration Particles (Cat. No. 556286, 6 peaks).

Specifications

Catalog number	556286	559123/653144	653145
Bead type	polystyrene	polystyrene	polystyrene
Bead size	3.0–3.4 µm	3.0–3.4 µm	3.0–3.4 µm
Solution	aqueous, 0.01% NP40, ≤0.02% sodium azide	aqueous, 0.01% NP40, ≤0.02% sodium azide	aqueous, 0.01% NP40, ≤0.02% sodium azide
Concentration	1 x 10 ⁷ particles/mL	1 x 10 ⁷ particles/mL	5 x 10 ⁶ particles/mL
Excitation range	365–650 nm	365–650 nm	600–650 nm
Application	checking linearity of the PMT in each channel	checking sensitivity and resolution	checking sensitivity and resolution on the BD Accuri C6 APC channel

Ordering Information

Description	Particle size, µm	Size	Cat. No.
Rainbow Calibration Particles (6 peaks)	3.0–3.4	5 mL	556286
Rainbow Calibration Particles (8 peaks)	3.0–3.4	4 mL	653144
		5 mL	559123
Allophycocyanin Calibration Particles (6 peaks)	3.0–3.4	2 x 4 mL	653145

Related Products

Description	Particle size, µm	Size	Cat. No.
Blank Calibration Particles	3.0–3.4	5 mL	556296
Nile Red Fluorescent Particles (High Intensity)	1.7–2.2	2 mL	556261
Nile Red Fluorescent Particles	2.5–4.5	2 mL	556270
Nile Red Fluorescent Particles	2.5–4.5	2 mL	556269
Rainbow Calibration Particles (Brightest peak in 556286)	3.0–3.4	5 mL	556291
Rainbow Calibration Particles (Mid-range FL1 Fluorescence)	3.0–3.4	5 mL	556298
Rainbow Calibration Particles (6 peaks)	6.0–6.4	5 mL	556288
UV Fluorescent Particles (High Intensity)	1.7–2.2	2 mL	556255



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