Sphere Scientific Corporation

Fluorochrome MonoSil Microsphere

Description

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Microsphere Composition:	Silicon Dioxide
Crystal structure :	Amorphous
Fluorescent Composition:	Rhodamine B (orange fluorescence; Excitation/Emission＝310/575nm)
Form :	Aqueous dispersion
Approximate Concentration (W/V):	5% solids
Sodium Azide Concentration :	50PPM
Surfactant :	<0.1% (W/V) or None

Physical Data

Nominal Diameter : 2μm, 3μm, 4μm, 5μm, 6μm, 7μm, 8μm, 9μm, 10μm, 11μm, 12μm

Density : 1.9 to 2.3 g/cm3

Refractive Index: 1.40 to 1.46 @ 589 nm, 25℃

Physical and Chemical Properties

Hydrophilic surface, possess many silanol functional groups on the surface, which can be used for a covalent attachment of other ligands; Stable in organic solvents, Soluble in strong bases and in hydrofluoric acid.
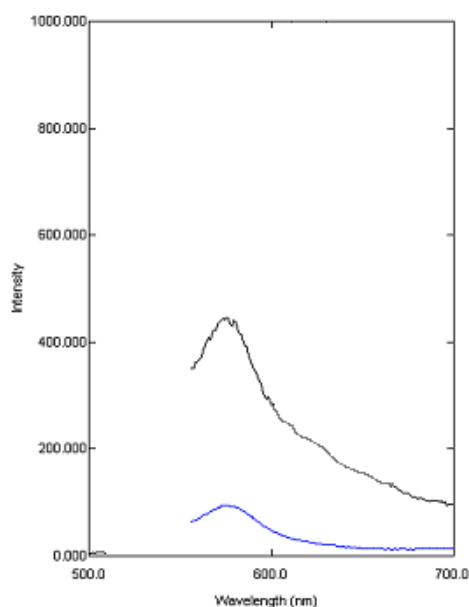
Example of SEM Image
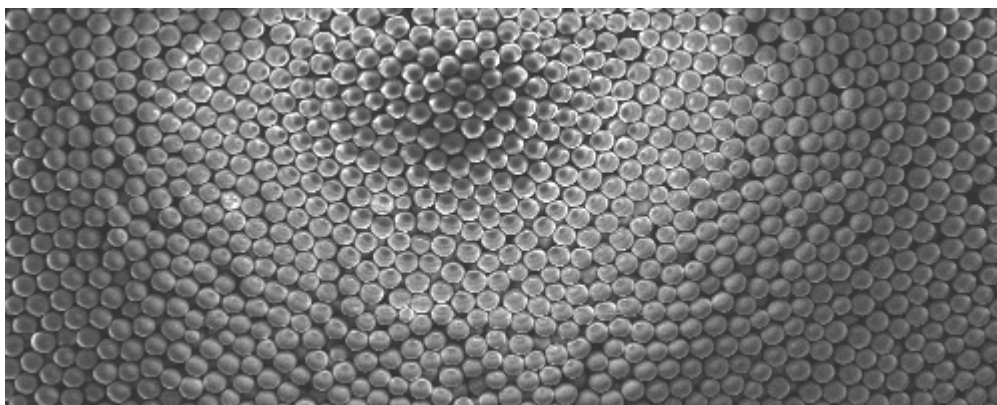
5.5um Silica Microsphere

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Example of Fluorescence Microscopy Image
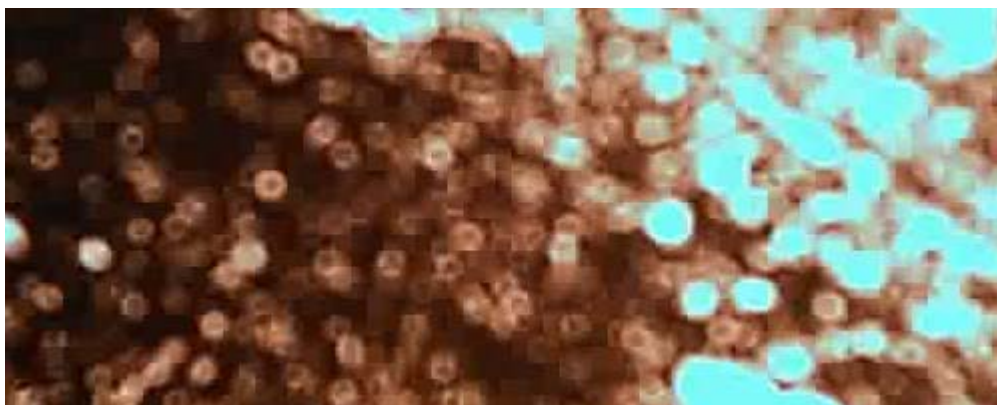
Fluorescence Emission Spectra of Microsphere

Storage and Handling

Aqueous dispersions of silica particles have excellent stability. Storage at room temperature is possible without bacterial growth. Particles can be washed with organic solvent, air dried and autoclaved. Dispersions of silica particles can be frozen.

Application

1. Silica particles find wide applications as model systems in medicine, biochemistry, colloid chemistry, and aerosol research;
2. Optical Tweezer Manipulation;
3. The fluorescent particles can be used as standards (e.g. in flow cytometry, confocal laser scanning microscopy, light scattering

instruments) as well as tracers in environmental science, flow visualization and measurements in gases and liquids like Laser Doppler Anemometry (LDA), Particle Dynamics Analysis (PDA), Particle Image Velocimetry (PIV), Digital Imaging Velocimetry (DIV) and Laser Speckle Velocimetry (LSV); In applications with a high background light level, fluorescent seeding particles can significantly improve the quality of vector maps from PIV and LDA measurements.