



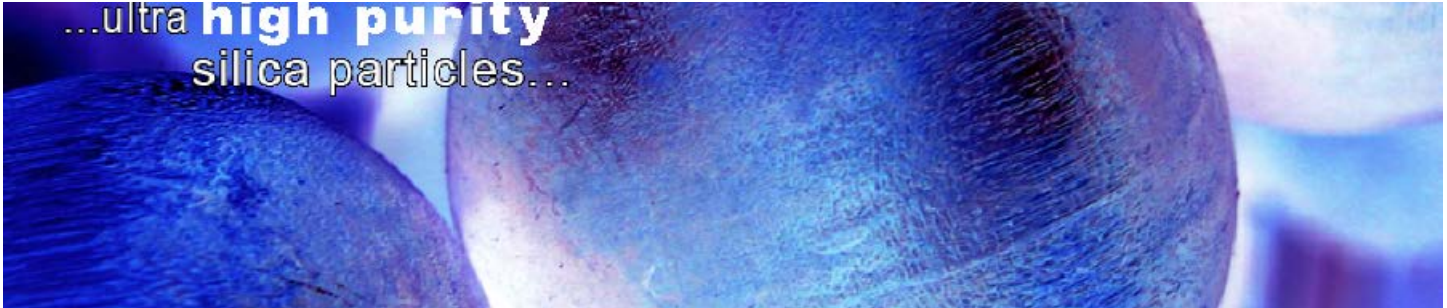
Applied Physics, Inc.

400 N County Road 2E
Monte Vista, CO 81144 USA

Nano Particle Technology

Cel 1-720-635-3931
Email Sales@AppliedPhysicsUSA.com
Web www.AppliedPhysicsUSA.com

Silica Particles, SiO₂ Particles

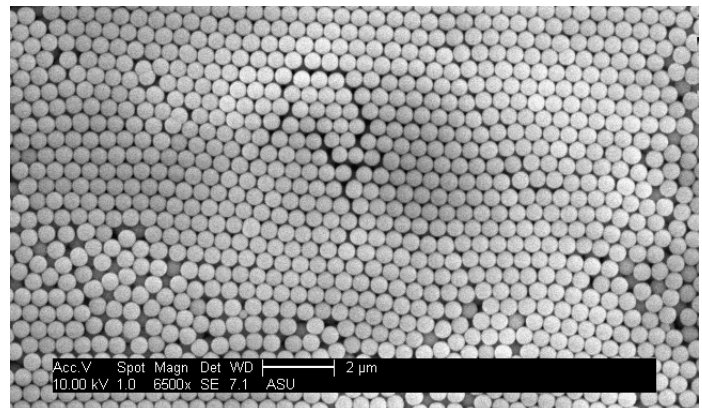


We provide the highest purity of silica particles available at 99.997% pure in commercial quantities with the narrowest peak size distribution of $\leq 1\%$. We provide silica nanoparticles in the size range of 20 nanometers to 2,000 nanometers in DI Water solution with no surfactant. We also provide bulk, dry Silica particles from 2 microns to 30 microns.

Applications include uses in liquid chromatography, optical lens polishing, CMP (chemical mechanical planarization) slurries and consumables, CMP polishing pads, solar cell manufacturing and mesoporous silica nanoparticles (MSN). Adding powdered, colloidal nano-silica (NS) provides significant improvement to the mechanical properties during the production of Portland cement and provides much more compressive strength to concrete and mortar.

Benefits

- High Size Repeatability from Batch to Batch
- $\leq 1\%$ Peak Size Distribution Width
- 20nm to 30 μ m Nano-Particle Size
- Ultra-High Silica Purity of 99.997%
- Dry Silica Powder from 1Kg to 200Kg volume
- SiO₂ Particles for instrument size calibration, 15ml, 10% concentration, no Surfactant



0.5um Silica Nanoparticles

Industries

- High Pressure, Liquid Chromatography
- Nano-Particles and Composites
- Optical Lens, Precision Polishing
- Pharmaceutical Drug Delivery
- Mesoporous Silica Nano-particles (MSN)
- CMP Slurries, Chemical Mechanical Polishing
- Silicon Wafer Polishing
- Thin Film, Solar Cell Manufacturing
- Portland Cement Manufacturing



2.0um Silica Nanoparticles

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Bill To: PO Box 186, Monte Vista, CO 81144 USA Ship To: 400 N County Road 2E, Monte Vista, CO 81144 USA



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Brookhaven Instruments Corp.
90Plus Particle Sizing Software Ver. 5.23

Date: Feb 26, 2016

Time: 11:24:17

Batch: 0

Sample ID 111121XA1A2A3A4B5B6B7 (Combined)

Operator ID LS

Notes

Measurement Parameters:

Temperature	= 25.0 deg. C	Runs Completed	= 3
Liquid	= Water	Run Duration	= 00:00:30
Viscosity	= 0.890 cP	Total Elapsed Time	= 00:01:30
Ref.Index Fluid	= 1.330	Average Count Rate	= 474.4 kcps
Angle	= 90.00	Ref.Index Real	= 1.430
Wavelength	= 657.0 nm	Ref.Index Imag	= 0.000
Baseline	= Auto (Slope Analysis)	Dust Filter	= Off

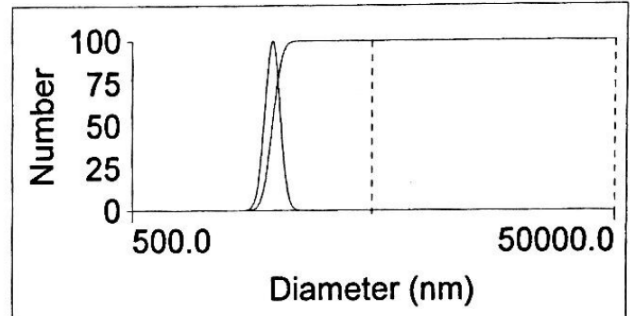
111121XA1A2A3A4B5B6B7 (Combined)

Effective Diameter: 1988.1 nm

Polydispersity: 0.005

Baseline Index: 8.7

Elapsed Time: 00:01:30



Lognormal Distribution

Run	Eff. Diam. (nm)	Half Width (nm)	Polydispersity	Baseline Index
1	2011.5	142.2	0.005	9.7
2	1956.6	138.3	0.005	2.2
3	1978.9	566.8	0.082	7.0
Mean	1982.3	282.4	0.031	6.3
Std. Error	15.9	142.2	0.026	2.2
Combined	1988.1	140.6	0.005	8.7