

# Particle Size Standards — Silica Microspheres

*Monodisperse Silica Microspheres, NIST Traceable Size Standards*

## Applications:

- Instrument calibration
- Spacer

## Advantages:

NIST traceable mean diameters  
Monodisperse size distribution  
Surfactant free  
Dropper tip bottle

## Benefits:

Solvent resistant  
Easy to use  
NIST traceable documentation included  
Silica particles provide greater durability and chemical stability



**Product Description.** This series is designed for applications requiring monodisperse inorganic spheres. Like glass, silica has a much higher density than polystyrene and the opaque spheres provide more contrast than polymer particles in optical and electron beams. They are calibrated and certified by NIST traceable procedures and are suitable for a wide variety of particle measurement applications.

## Product Attributes

Particle Composition:	Amorphous silica
Particle Sizes:	Mean Diameters from 0.5 to 1.6 µm (see reverse)
Particle Density:	1.8 to 2.2 g/cm <sup>3</sup>
Index of Refraction:	1.40 to 1.46 @ 589nm (25°C)
Bottle Size:	15 mL @ 2% solids by weight
Expiration Date:	≥ 24 months
Additives:	None
Package Includes:	Material Safety Data Sheet (MSDS) Certificate of Calibration and Traceability to NIST
Storage & Handling:	Store at room temperature or refrigerated. Keep bottle tightly sealed to avoid contamination.

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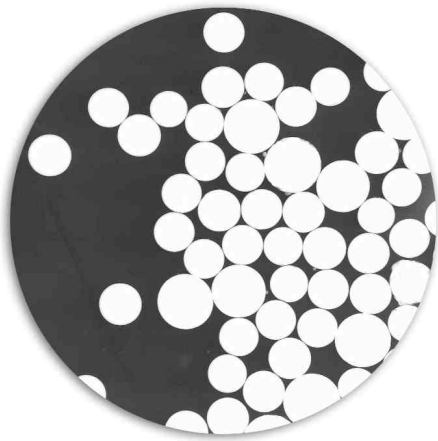
Sales Bulletin 118A

10/15/05

## Ordering Information

Catalog Number	Nominal Diameter	Certified Mean Diameter	Size Distribution Std. Dev. & C.V.
8050	0.5 $\mu\text{m}$	0.49 $\mu\text{m} \pm 0.03 \mu\text{m}$	0.02 $\mu\text{m}$ (4.1%)
8070	0.7 $\mu\text{m}$	0.73 $\mu\text{m} \pm 0.04 \mu\text{m}$	0.03 $\mu\text{m}$ (4.1%)
8100	1.0 $\mu\text{m}$	0.99 $\mu\text{m} \pm 0.05 \mu\text{m}$	0.02 $\mu\text{m}$ (2.0%)
8150	1.6 $\mu\text{m}$	1.57 $\mu\text{m} \pm 0.06 \mu\text{m}$	0.03 $\mu\text{m}$ (1.9%)

The silica microspheres are made from amorphous silica from a precipitation method. The microspheres are packaged in pure, deionized water without any surfactants.



This is a transmission electron microscopy (TEM) photograph of a mixture of our 8070 and 8100 silica particles.

**Product Category Description:** Standards & Validation Materials are **certified** NIST traceable size standards for instrument validation & calibration.

All products are manufactured and packaged at our ISO 9001:2000 registered facility in Palo Alto. Please feel free to contact our technical services department if you have any questions about these products or have a special material requirement not listed here.

**LIMITED WARRANTY:** These products are intended for laboratory research use by trained scientific personnel. Determination of their suitability for specific end use is solely the responsibility of the user, who assumes all liability for loss or damage arising out of the use of the product. Rebottling or relabeling voids the warranty and certification. Duke Scientific Corporation's warranty is limited to replacement of defective products if returned with our authorization within 60 days of purchase date.

## Duke Scientific Corporation

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Your Trusted Partner in Particle Science

Notes: See the website for additional Standards & Validation Products. Material Safety Data Sheets available on-line. For more information on our NIST traceable methodology, the following technical notes can be found on our website:

- **TN-010 Internal Standard Method for Size Calibration of Sub-Micrometer Spherical Particles by Electron Microscope**
- **TN-018 Improved Array Method for Size Calibration of Monodisperse Spherical Particles by Optical Microscope**