C04-9

Thermo SCIENTIFIC

DUKE STANDARDS™ Microsphere Size Standards
NIST Traceable Mean Diameter

1. DESCRIPTION. These particle size standards provide accurate and traceable size calibration for particle size analysis. They are part of a series of polymer microspheres with calibrated mean diameters traceable to the Standard Meter through the National Institute of Standards and Technology (NIST). Diameters from 20 nanometers (nm) to 160 micrometers (µm) are available as aqueous suspensions in dropper-tipped vials, calibrated by photon correlation spectroscopy (PCS), transmission electron microscopy (TEM) or optical microscopy. The aqueous medium has been prepared to promote dispersion and reduce clumping of the particles. The approximate particle concentration in percent solids is given to facilitate dilution for the calibration and validation of particle analyzers. Diameters from 200 µm to 1000 µm are available as dry spheres, calibrated by optical microscopy. The certified mean diameter is traceable to NIST. Other values are for information only and should not be used as calibration values.

2. PHYSICAL DATA — Catalog Number: 4009, 4009A and 4009B, Nominal 1 µm

Certified Mean Diameter:	0.994 µm ± 0.015 µm, k=2
Standard Deviation:	0.010 µm
Coefficient of Variation:	1.0%
Microsphere Composition:	Polystyrene
Microsphere Density:	1.05 g/cm^3
Index of Refraction:	1.59 @ 589 nm
Approximate Concentration:	1.0% solids

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CERTIFICATE OF CALIBRATION AND TRACEABILITY

This certifies that the calibrated mean diameter dimension of this product was transferred by optical microscopy from a stage micrometer calibrated by the National Institute of Standards and Technology (SRM 2800 SN411). NIST Standard Reference Materials 1690, 1692, 1960, and 1961 were used to validate the accuracy and traceability of the calibration methods.

Catalog Number: 4009, 4009A and 4009B, Duke Standards™ Microsphere Size Standards

Certification Date:	March 14, 2011
Certified Batch:	4009-005
Production Batch:	4009-039
Certified Mean Diameter:	0.994 µm
Expanded Uncertainty:	± 0.015 µm, k=2

3.5.15

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Packaging Lot #44659

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