

# NIST Traceable Size Standards

## 3000, 4000, 8000, 9000 Series

### Calibrate and validate particle sizing and counting instruments

Thermo Scientific™ NIST (National Institute of Standards and Technology) Traceable Size Standards work on an open platform without bias or restriction on any instrument brand or model. They come packaged in easy-to-use dropper-tipped bottles to minimize operator error by delivering the precise volume of beads into the instrument. Various polystyrene, silica, and glass beads are available in a broad range of sizes (20 nm to 2000 µm) to satisfy a broad range of instrument quality control and calibration needs.



Includes Certificate of Calibration and Traceability to NIST, which helps in audits by answering the question: "How do you know the instrument is measuring properly?"

- NIST traceability provides an official, objective third-party comparison of our beads to a known standard and maintained by the National Institute of Standards and Technology
- Certificate of Calibration and Traceability to NIST enables labs to show compliance to ISO 9000, ISO 10012, ANSI/NCSL Z540, GMP/GLP and other standards and regulations
- Superior uniformity ensures precision in calibration from instrument to instrument, from lab to lab
- Uncertainty of Measurement is stated on the Certificate of Analysis
- Excellent lot-to-lot reproducibility minimizes size shift between calibrations

**ThermoFisher**  
SCIENTIFIC

Authorized Distributor in your area

**Distrilab**  
microsphere technology

Wapenrustlaan 11-31  
7321 DL Apeldoorn  
The Netherlands

www.distrilab.nl  
info@distrilab.nl  
+31 (0) 85 040 9913



# 3000 Series - Monodispersed Beads

**Applications: Instrument calibration, microscopy, light scattering studies, colloidal systems research, assessing various sizes of bacterial, viral, ribosomal, and sub-cellular components**

The highly uniform 3000 Series of sulfate beads has a very narrow standard deviation since they are calibrated in nanometers using NIST traceable methodology. The beads are packaged as aqueous suspensions in 15 mL dropper-tipped bottles in concentrations optimized for ease of dispersion and colloidal stability.

**Note:** Due to minor variations between batches, the 3000 series size range may change slightly from batch to batch.

# 4000 Series - Monosized Beads

**Applications: Instrument calibration, microscopy, light scattering studies, and colloidal systems research**

The nominal diameter of the 4000 Series Duke Standards monosized beads is calibrated with NIST traceable microscopy methods, while the size distribution and uniformity is measured by electrical resistance analysis or optical microscopy.

- Beads with a nominal diameter from 1 µm to 160 µm are made from polystyrene and packaged as aqueous suspensions in 15 mL dropper-tipped bottles in optimum concentrations for easy dispersion, handling and dilution
- Beads with nominal diameters of 200 µm to 650 µm are packaged as dry particles. They are made from polystyrene crosslinked with divinylbenzene. The two largest beads (750 µm and 1000 µm) are polymer products

3000 Series, 15 mL, 1% Solids	
Diameter	Cat. Number
Aqueous Suspensions, Calibrated by Photon Correlation Spectroscopy (PCS)	
20 nm	3020A
30 nm	3030A
40 nm	3040A
Aqueous Suspensions, Calibrated by Transmission Electron Microscopy (TEM)	
50 nm	3050A
60 nm	3060A
70 nm	3070A
80 nm	3080A
90 nm	3090A
100 nm	3100A
125 nm	3125A
150 nm	3150A
200 nm	3200A
220 nm	3220A
240 nm	3240A
270 nm	3269A
300 nm	3300A
350 nm	3350A
400 nm	3400A
450 nm	3450A
500 nm	3495A
500 nm	3500A
560 nm	3560A
600 nm	3600A
700 nm	3700A
800 nm	3800A
900 nm	3900A

4000 Series, 15 mL		
Diameter	% Solids	Cat. Number
Aqueous Suspensions, Calibrated by Optical Microscopy		
1.0 µm	1.0	4009A
1.0 µm	1.0	4010A
1.1 µm	1.0	4011A
1.3 µm	1.0	4013A
1.6 µm	1.0	4016A
1.8 µm	1.0	4018A
2.0 µm	0.4	4202A
2.5 µm	0.5	4025A
3.0 µm	0.5	4203A
4.0 µm	0.4	4204A
5.0 µm	0.3	4205A
6.0 µm	0.3	4206A
7.0 µm	0.3	4207A
8.0 µm	0.3	4208A
9.0 µm	0.3	4209A
10 µm	0.2	4210A
12 µm	0.2	4212A
15 µm	0.3	4215A
20 µm	0.3	4220A
25 µm	0.5	4225A
30 µm	0.6	4230A
40 µm	0.7	4240A

4000 Series, 15 mL		
Diameter	% Solids	Cat. Number
Aqueous Suspensions, Calibrated by Optical Microscopy		
50 µm	1.4	4250A
60 µm	1.2	4260A
70 µm	2.0	4270A
80 µm	1.8	4280A
100 µm	2.1	4310A
115 µm	2.6	4311A
140 µm	4.0	4314A
160 µm	4.8	4316A
Uniform Dry Spheres, Calibrated by Optical Microscopy		
200 µm	2.3 x 10 <sup>5</sup> #/g	4320A
240 µm	1.3 x 10 <sup>5</sup> #/g	4324A
280 µm	8.3 x 10 <sup>4</sup> #/g	4328A
300 µm	6.7 x 10 <sup>4</sup> #/g	4330A
400 µm	2.8 x 10 <sup>4</sup> #/g	4340A
500 µm	1.4 x 10 <sup>4</sup> #/g	4350A
550 µm	1.1 x 10 <sup>4</sup> #/g	4355A
650 µm	6.6 x 10 <sup>3</sup> #/g	4365A
Uniform Dry Spheres, Calibrated by Optical Microscopy - Polymer		
750 µm	3.8 x 10 <sup>3</sup> #/g	4375A
1000 µm	1.6 x 10 <sup>3</sup> #/g	4400A

Authorized Distributor in your area



Wapenrustlaan 11-31  
7321 DL Apeldoorn  
The Netherlands

www.distrilab.nl  
info@distrilab.nl  
+31 (0) 85 040 9913

