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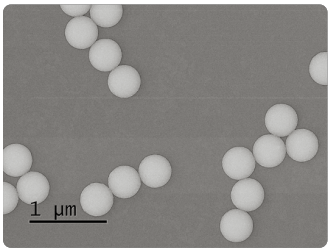
Opti-Count®

First-of-their-Kind Nanosized Reference Materials for Accurate Particle Number Concentrations.

Precision-engineered particle count reference materials, Opti-Count® are designed for routine use in liquid laser particle counters and are optimal for validating and calibrating both counting and sizing instruments in order to ensure accurate and reproducible results.



Certified Values: Certified particle number concentration and a particle diameter that is traceable to SI units.

Particle Size: Monomodal nominal 400 nm polystyrene particles.

Concentration: 10^6 and 10^8 particles/mL available.

Full Uncertainty Budget: Includes an expanded uncertainty from characterization, homogeneity, storage and transport stability that covers a 95% confidence interval.

Ready-to-Use: Single-use vials (1 mL), requiring only gentle redispersion.

Surfactant-Free: Electrostatic stabilization in an aqueous medium means low background noise - ideal for sensitive analytical methods.

Storage: Room temperature, no refrigeration needed.

Opti-Count® Particle Reference Materials
Certified accuracy. Proven stability. Regulatory confidence.

Filling the Gap in Nanoscale Particle Number Concentration Standards

Until now, nanoscale particle analysis has had to rely on count standards that provide only approximate values — with no defined uncertainties and no traceability to guarantee reliability. This limitation has made it difficult to ensure measurement accuracy, defend results, and meet the increasingly strict demands of global regulations.
Opti-Count® changes that. Developed following ISO 17034, the international standard for reference material producers, Opti-Count® provides certified number concentrations and indicative number-weighted particle size distributions for particles below 1 µm. Each batch is rigorously characterized and fully traceable to SI units, ensuring that measurements are accurate, validated, and accountable. Whether meeting legal compliance, assuring product quality, or monitoring nanoplastics exposure, Opti-Count® particles provide confidence in the results that matter.

Why Opti-Count® Stands Apart

No other fully certified nanoscale number concentration reference material exists on the market today. Opti-Count® particles were designed specifically to address the evolving global regulatory landscape, offering laboratories, manufacturers, and researchers a standard they can trust for precision, stability, and traceability. Their advanced formulation ensures easy to use, consistent performance over their lifetime — with convenient storage at room temperature — while its broad application range makes it an indispensable tool in pharmaceutical, biotechnology, semiconductor, cosmetic, and food industries.

Opti-Count® Number Concentration Reference Materials Specifications

Feature	Opti-Count® Reference Material
Particle Size	Nominal 400 nm
Concentration	10^6 and10^8 particles/mL available
Materials	Polystyrene in aqueous medium
Packaging	Single-use plastic vials (1 mL)
Stability	9 months after production date guaranteed
Uncertainty	<15% (concentration), <8% (size)
Applications	Validation, Calibration, QC, Monitoring
Surfactant-Free	Yes
Ready-to-Use	Yes
Refractive Index	1.62 @ 405 nm, 1.59 @ 589 nm; 25°C
Density	1.05 g/cm^3
pH Value	8
Particle Shape	Spherical
Storage	Store upright at room temperature and keep vials closed tightly
Package Units	1 x 1 mL and 6 x 1mL available

Built on Expertise

Opti-Count® particles are the result of the collaboration between **Dr. Lerche KG, an ISO 17025-accredited analytical laboratory with expertise in colloidal analysis,** and **Applied Microspheres GmbH, a leading manufacturer of particle standards and related products.** Characterization was performed using a state-of-the-art single-particle detector comprised of an advanced liquid flow cytometer with multi-angle laser light scattering, enabling simultaneous, calibrated, and traceable analysis of the number-weighted particle size distribution and number concentration with high precision and reproducibility.

Technical Details:

- **Comprehensive Characterization** - Certified values for particle number concentration, with particle diameter traceable to the International System of Units (SI) units.
- **Stable and Homogeneous** - Rigorous testing under ISO specifications ensures consistent and reliable performance over time.
- **Traceable** - Concentration and size measurements are traceable to SI units, guaranteeing data integrity and confidence in performance.
- **Electrostatic Stabilization** - Provides long-term stability without the use of surfactants, minimizing measurement artifacts.
- **Single-Use Packaging** - Prevents cross-contamination and ensures ease of use in any compatible particle counting instrument.
- **Single-Particle Analysis** - Employs advanced flow cytometry for high-throughput, high-precision, simultaneous determination of particle size and concentration.