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Certificate of Calibration

Catalog No.:
LS2500-05
LS2500-20

Particle Size Standard

Lot No.: **LS443.153**

The lot of this particle size standard had been size-characterized during and after filling under highest accuracy. The determined mean particle size diameter x_N is traceable to the "Standard Meter" according to the National Institut of Standards and Technology (NIST).

Particle Sizing Instrument: Particle sizing system "Syringe", Markus Klotz GmbH - Bad Liebenzell, Germany
Sensor Type: 8032 Calibr. Curve: 151015.cal Flow: 16.0 mL/min

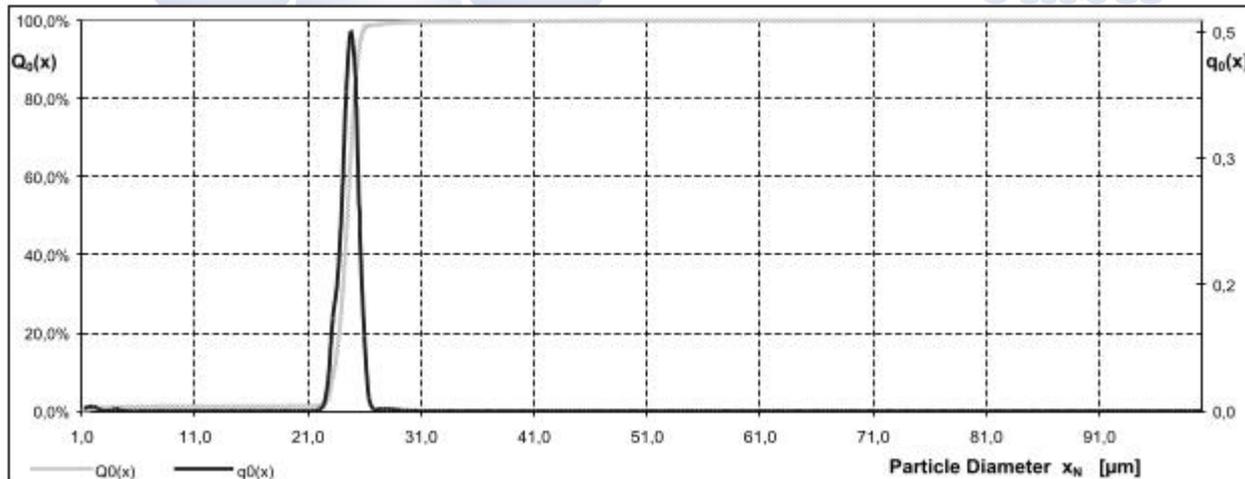
Particle Diameter (Mode): **$x_N = 25.0\mu\text{m} \pm 0.3\mu\text{m}$** $x_V = 25.0\mu\text{m} \pm 0.3\mu\text{m}$

Wiesbaden, 15.10.2015

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Dr. Bernd Schied

Physical Data:

Standard Deviation: 0.5 μm relative to x_N
Rel. Standard Dev. (C.V.): 2.1% relative to x_N
Particle Concentration: Appr. 3×10^6 part./mL
Polymer Density: 1.05 g/mL
Refractive Index: 1.59 (25°C, 589nm)
Chemical Composition: Aqueous suspension consisting of: Poly-(styrene-co-divinylbenzene), surfactants (<0.1%), preservatives (<0.05%)



N_i or V_i : Number or volume of all particles $\geq x_i$

$q_0 = (N_1 - N_2) / (N_{\text{all}} \cdot dx)$

$q_3 = (V_1 - V_2) / (V_{\text{all}} \cdot dx)$

$Q_0 = 100 \cdot N_1 / N_{\text{all}}$

$Q_3 = 100 \cdot V_1 / V_{\text{all}}$



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Application

Being able to apply properly the particle size standard has to be a homogeneous suspension.

The following recommendations are valid for single particle optical counting instruments.

- Shake the bottle carefully (upside-down) until no sediment is visible.
- Treat the closed bottle with an ultra sonic bath for about 30 seconds
- Fill a small beaker with particle-free water in the mean time (---> table).
- Recommendation: Dispose the first drop into waste, then use the following dosage:

Amount of water: 40ml	Quantity of drops: 2 drops	Resulting particle concentration: Appr. 3000 - 6000 part./mL
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- Homogenize by stirring (i.e. magnetic stir bar).
- Start calibration measurement.

Storage, Shelf Life

Shipping Date:



This particle size standard can be applied without any quality loss for 3 years from shipping date. Freezing, solar radiation, drying or any contamination can make this standard unusable for calibration purposes. Therefore please note the following advices.

- Keep the dropper-tipped vial sealed all the time.
- Do not touch the dropper-tip with fingers; do not clean it with towels or contact it with other chemicals.
- Recommended storage temperature is 4°C - 15°C; optimal temperature is 8°C; do not freeze!
- Particle size standards are reference substances.
Hence, store them definitely separated from other chemicals of daily use.