POSTNOVA

PN3700

DLS Zetasizer Nano

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The Postnova PN3700 DLS Zetasizer Nano brings you the practiality of a maintenance-free system with the versatilty to offer precision measurement for your laboratory`s particle characterisation needs in a single compact unit. It allows to determine the particle size, the zeta potential and the molecular weight.

The PN3700 DLS Zetasizer Nano used the technique of dynamic light scattering (DLS) toe measure the size of a wide range of materials in the size range of 0.6 nm to 3 µm. The measurement techniqu is absolute, no calibration is required and the measurement itself is simple. The results are accurate and repeatable.

The PN3700 DLS Zetasizer Nano offer the highest ever sensitivity, accuracy and resolution for the measurement of zeta potential of particles and surfaces. This is achieved by a combination of laser Doppler velocimetry and phase analysis light scattering (PALS). Even samples of very low mobility can be analysed and their mobility distributions calculated.

Standard Operating Procedures (SOP) ensure that measurements are simplified and results are repeatable between operators and sites. Compatibility with ISO13321/22412 and optional 21 CFR part 11 compliant software ensures all current recommendations and regulations are met.
An optional research software package gives access to further control of the system and analysis algorithms. A research grade correlator and sensitive Avalanche Photodiode Detector (APD) are standard.

Software to make it happen

The excellence of the PN3700 DLS Zetasizer Nano hardware can only be fully utilised with similarly advanced software. The operating software provides the flexibility required for measurement design and data analysis while retaining simplicity of operation. The software is packed with features to aid the new and experienced user alike to get the most out of the system and give confidence in the data. Quality reports provide an overview of the quality of the data and results – and advice about how to improve the measurement. An 'Expert Advice System' running in real time, examines the data from single and repeat measurements, and informs the user as the measurement progresses, an 'Expert standing with you' at all times. A high degree of automation in the measurement process ensures simplicity of operation and avoids inappropriate settings.

Accessories and cell options

Autotitrator

While zeta potential alone is often used to make comparisons between materials and formulations, measuring zeta potential as a function of pH, conductivity or concentration of an additive, provides much greater insight into the processes involved in stabilizing or flocculating disperse systems. Using the MPT-2 autotitrator these measurements can be made automatically using 4 mL of sample, or 10 mL if pH is required. Operation is fully automated and protocols can be specified as part of standard operating procedures.

Cuvettes for Size Measurement

A wide range of disposable and glass and quartz cuvettes with volumes as low as 12 µL for flow and batch applications:

Disposable capillary cell

- No maintenance – use for a series of experiments then discard
- Cross contamination eliminated
- 750 µL (< 50 µL sample using diffusion barrier technique)

Universal 'Dip' cell

- Uses inexpensive polystyrene cuvettes
- Can be used for both aqueous and non-polar dispersants such as hydrocarbons

High concentration cell

- Offers the maximum concentration zeta potential capability with the PN3700 DLS Zetasizer Nano

Surface zeta potential cell

- Measurement of zeta potential of surfaces and materials adsorbed to surfaces
- Measure effect on zeta potential of environment, e.g pH, ion concentration, or material adsorption to surfaces, e.g. proteins

Specifications

Size

- Size Range:
  0.3 nm - 5 µm
- Measurement Angles:
  12.8° and 90°
- Minimm Sample Volume:
  20 µL

Zeta Potential

- Size Range:
  3.8 nm - 100 µm
- Minimum Sample Volume:
  150 µm (< 50 µL using diffusion barrier technique)
- Maximum Sample Conductivity:
  200 mS/cm

Molecular Weight

- Molecular Weight Range:
  342 Da to 2x10E7 Da
  (by hydrodynamic diameter)
- Molecular Weight Range:
  9800 Da to 2x10E7 Da
  (by Debye plot)
- Minimum Sample Volume:
  20 µL

- Temperature Control Range:
  0°C to 90°C
  Steps +/- 0.1°C

- Standard Laser
  4 mW He-Ne, 632.8 nm

- Correlator:
  Min. sample time 25 ns
  Max. delay time 8000 s
  Max. 4000 channels

- Viscosity Range:
  0.3 - 10000 mPas

- Weight:
  21 kg

- Outer Dimensions:
  Width/Height/Lenth
  320 mm x 260 mm x 600 mm

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