

Acoustic Particle Sizer, APS-100

Particle Sizing without Dilution

True Particle Size Distributions

You don't have to settle for *dilute and obscure* Particle Size Distribution Data.

The patented APS-100 performs measurements on undiluted and/or opaque samples, flowing or stirred!

Better yet, unlike other particle size analyzers, you don't have to know *a priori*— or guess — the shape of your sample's Particle Size Distribution (PSD).

The APS produces undiluted PSD data simultaneously with Longitudinal Viscosity, Percent Solids, pH, Conductivity, Temperature, and acoustic attenuation and sound speed spectra.

Call on the particle size and Zeta potential analysis leader for the last thirty years, Matec Applied Sciences. Our knowledgeable staff will gladly perform free sample analyses for evaluation; or if you prefer, we will visit you for an on-site demonstration.

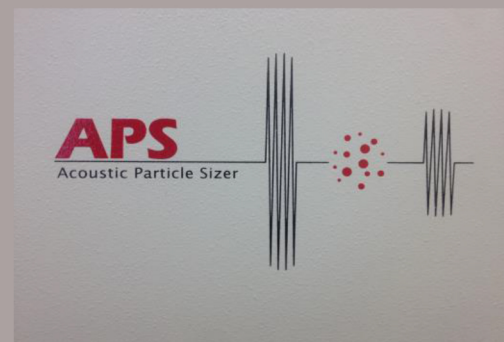
HOW IT WORKS

The APS produces PSD data from acoustic attenuation spectroscopy measurements without the need for sample dilution (up to 60% vol). The APS also measures Longitudinal Viscosity, Percent Solids, pH, conductivity, and temperature of samples in the particle size range of 5 nm to 100 microns.

As sound travels through a slurry or colloid, it is attenuated. The level of attenuation is related to the particle size distribution. The APS measures acoustic attenuation very accurately over the 1-100 MHz frequency range. Because sound travels through all material media, APS acoustic attenuation measurements can be made on high-concentration and/or opaque samples. Particle settling is not a problem since samples can be stirred or pumped during the measurement.



The versatile and powerful APS-100



Some APS-100 Applications:

- R&D, as well as, Industrial Production QC.
- Aqueous, as well as, non-aqueous Colloids, Slurries/Dispersions/Suspensions/Emulsions
- Inks
- Ceramic Slips
- Catalysts
- Minerals
- Metal Oxides, Light Phosphors, Organic/Inorganic Pigments, Pharmaceuticals, Biocolloids.
- Semiconductor Chemical Mechanical Polishing (CMP) slurries:
Detect wafer- scratching oversize particles directly, or determine the slurry's actual, detailed PSD.

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APS-100 Features

APS analysis is independent of the sample's Zeta potential level. The APS readily analyzes particles of zero, as well as, high electric charge, including low to high viscosity.

APS sample analysis is quick and easy without requiring sample dilution, which is time consuming, error prone, and may alter the sample's actual PSD. Simply pour, or continuously pump your sample into the APS sample cell and the APS' intuitive software does the rest in minutes.

The APS uses a patented software algorithm to calculate detailed PSD data without the need for assumptions regarding the PSD shape.

Other ensemble-type instruments, e.g., light-scattering, require that either the software or the operator assume or guess whether the PSD is unimodal, bimodal, lognormal or Gaussian. Such assumptions may render the data unreliable. The APS' innovative patent-pending hardware design simplifies operation while minimizing maintenance. This design is thus suitable for R&D, as well as, repetitive QC measurements. The APS is also suitable for process online operation. Please enquire about our Industrial Process Online APS Instrument.

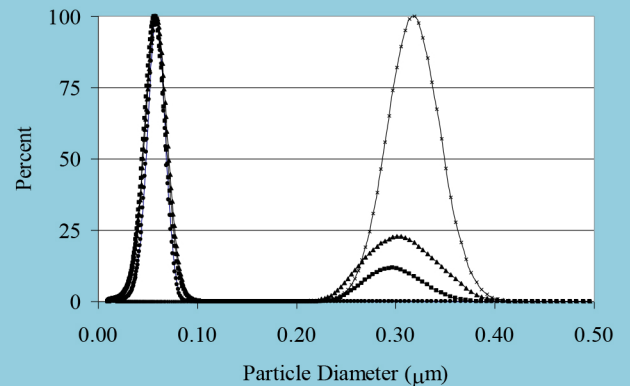
APS-100 Data

The two graphs shown here correspond to blends of a 30 nm and a 300 nm silica samples at various ratios analyzed by an APS-100 instrument.

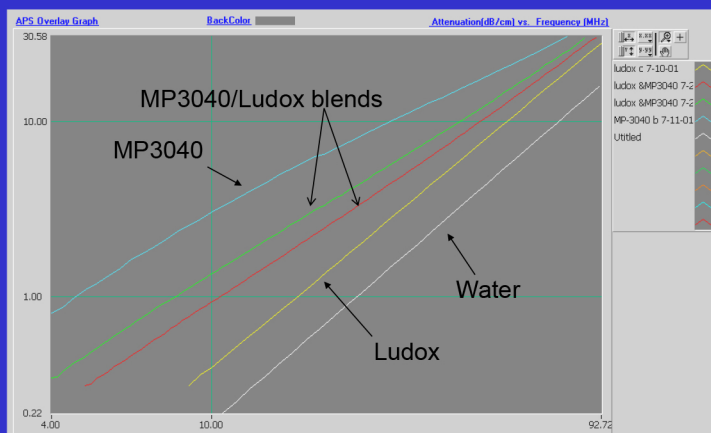
The Acoustic Attenuation spectra, as well as, the PSD data report the presence of the two populations. The APS-100 not only detects both populations (modes) accurately but it also reports the different mode proportions, i.e. 100% of 300nm, or 100% of 30 nm, as well as, the blended samples.

Below please find our contact information. We invite you to contact Matec Applied Sciences for further technical information.

Four Silica Blends Analyzed by APS-100



SILICA ATTENUATION DATA



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