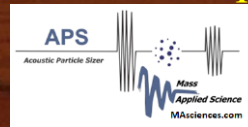


THE NEW ACOUSTIC PARTICLE SIZER, APS-200

Particle Sizing without Dilution by Acoustic dip Probe!



True Particle Size Distribution Data

You need not *settle* for dilute and obscure Particle Size Distribution Data.

The patented APS-200 performs measurements on undiluted and/or opaque or clear, flowing or stirred, aqueous, as well as, non-aqueous samples!

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).

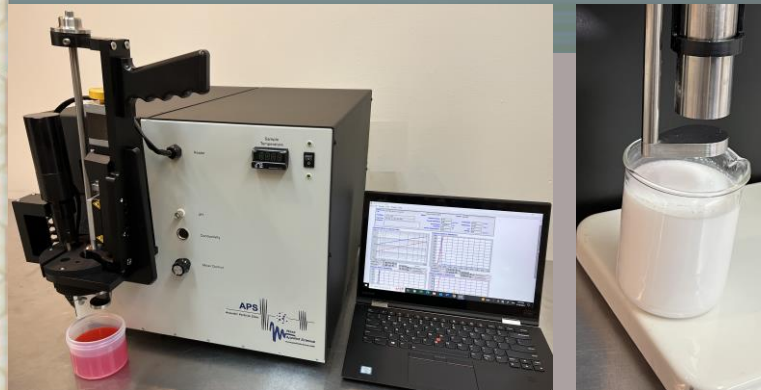
The APS-200's patent-pending dip Probe is easily cleaned and can be operated in handheld mode, placed on a Lab stand clamp, or on the APS probe holder. Disposable or other user-preferred sample cups can be used in order to readily transition to the next sample, thereby expediting sample measurements while eliminating sample cross contamination.

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, Mass Applied Science. Our knowledgeable staff will gladly perform sample analyses for evaluation.

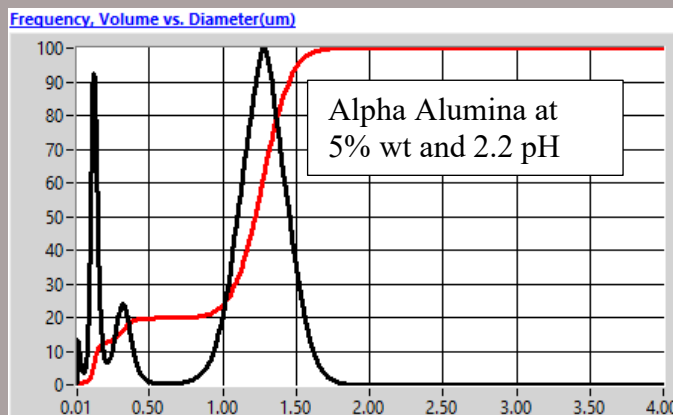
HOW IT WORKS

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-200

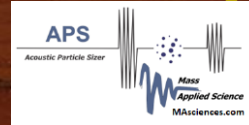


Some APS-100 Applications:

- 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, while finding the slurry's actual, detailed PSD.

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APS-200 Features

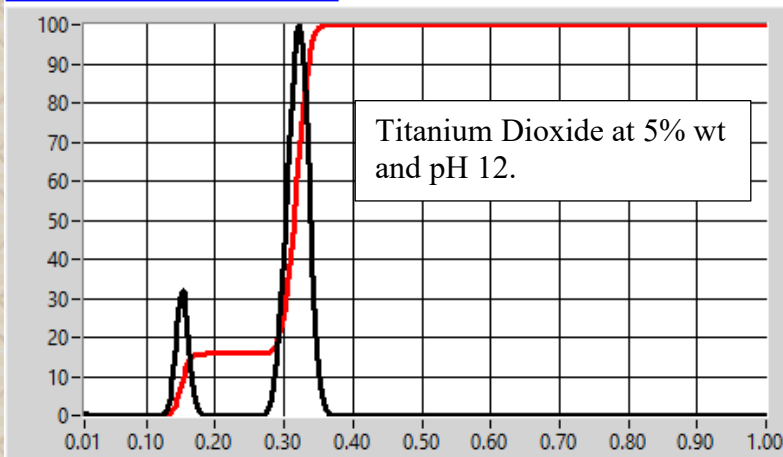
APS analysis is independent of the sample's Zeta potential level. The APS accurately analyzes particles of zero, as well as, high electric charge, including low to high viscosity, independently of the sample's electrolyte content, i.e., electrical conductivity.

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, and/or continuously pump, or dip the acoustic probe into, your sample and the APS' intuitive software does the rest in minutes. The APS software uses a first-principle mathematical model 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 produce misleading data.

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.

Frequency, Volume vs. Diameter(um)

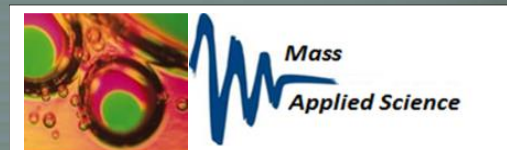
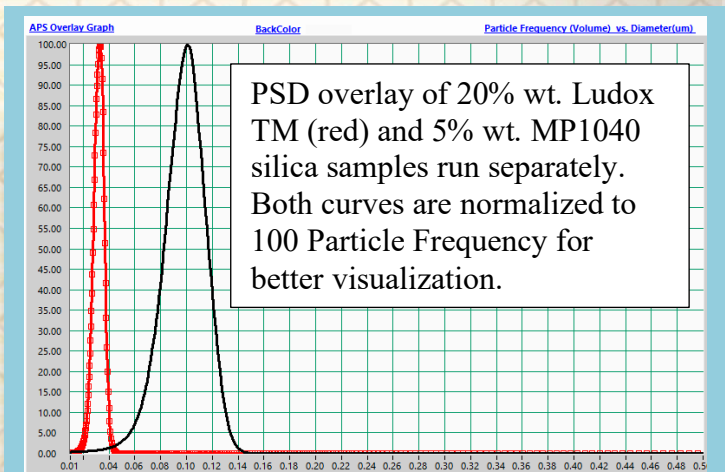


APS-200 Data

The three graphs here show Acoustic Attenuation Spectroscopy analysis data of separate Alumina, Silica, and TiO₂ samples by an APS-200 instrument fitted with an Acoustic Sizing dip Probe.

This data was generated without making assumptions regarding the PSD shape or the number of populations/modes. The APS-200 not only detects multiple populations (modes) accurately but also reports mode ratios.

Below please find our contact information. We invite you to contact Mass Applied Science for further technical information.



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