IMMUNOSITE TECHNOLOGIES

PARTICLE TESTING SERVICES

Particle Size, Distribution, Concentration and Zeta Potential

IST
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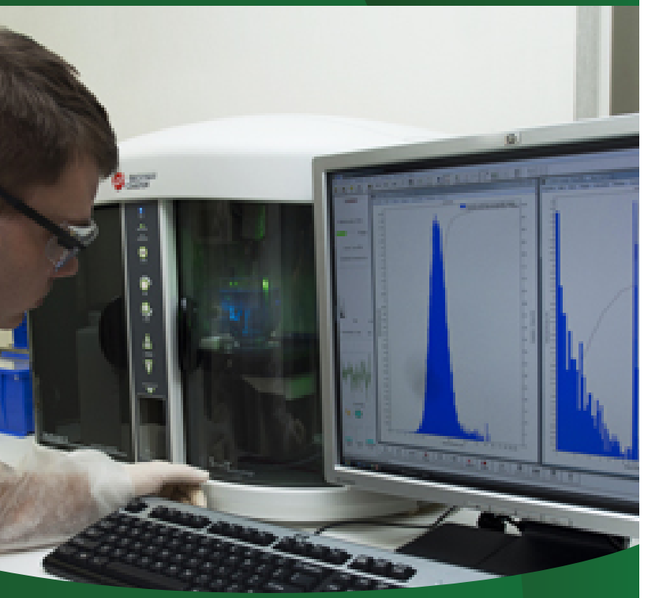

IST PARTICLE TESTING SPECIALTIES

- Particle Size Distribution (PSD)
- Particle Counting (Concentration)
- Surface Area Analysis
- Zeta Potential
- Aggregation Index
- Dispersion Stability
- Surface Charge Index
- Light Scattering
- Method Development
- Photomicroscopy

PARTICLE ANALYSIS BENEFITS MANY INDUSTRIES

From R&D, to manufacturing, to Quality Control and Quality Assurance, particle testing enables institutions across a broad spectrum to develop and manufacture better, innovative and longer-lasting products.

Pharmaceuticals	Paints & Pigments	Manufacturing QC
Abrasives	Toners & Inks	Coating Materials
Filler Compounds	Construction Materials	Foods & Beverages
Biologics	Polymers	Cosmetics
Environmental Products & Byproducts	Petrochemical Solutions	Advanced Materials
Metals & Minerals	Energy Products	Agricultural Components
		Nanotechnologies

Particle Testing Improves Product ROI: Performance, Quality and Competitiveness

Companies from a wide range of diverse industries have discovered the power of particle science to improve the performance, quality and competitiveness of their products. That's why they choose ImmunoSite Technologies (IST) for their particle testing services.

Clients from all corners of industry, government and scientific research place a high value on IST's particle testing expertise and GLP-compliant testing facilities, equipped with the best and latest in particle analysis instrumentation. They respect IST's worldwide reputation for providing the most accurate, high quality and scientifically reliable test results. Quick turnaround and competitive prices also help make IST a preferred partner.

The result: a minimal investment in particle testing yields returns many times over in superior product development, performance, quality, life and reliability.

Whatever Your Needs, Count On IST

From dry powders to wet slurries, 0.6 nm to 2,000 µm in size, and from very dilute to highly concentrated solutions, IST knows how to produce the analysis specifications needed with the best particle characterization results: the right materials, sample preparation steps, instruments and all analysis performed by professional and experienced technicians. All data undergoes extensive technical and QA reviews, ensuring the best results.

Some clients have an SOP (Standard Operating Procedure), and they want a partner like IST that they can depend on to follow the procedure and report the precise results they specify. Many clients submit samples to IST to ensure compliance within their own QC and/or QA programs. Others appreciate the opportunity to consult with experienced IST chemists and technicians to develop the best assay methodology to meet each particle testing requirement. For every sample tested, IST delivers a report with the specific desired particle testing information, analysis summary, graphs and statistics.

Why Companies Choose IST

PHARMACEUTICAL COMPANIES rely on particle testing to optimize the healing power and maintain the quality of many types of prescription and over-the-counter medications: from tablets to time-release capsules to creams and ointments.

PAINT AND PIGMENT COMPANIES use particle analysis to create subtle changes in color, ensure consistency in color and performance requirements such as adhesion, drying time, finish, durability and more.

SURFACE-ENHANCING COMPANIES depend on particle testing as they develop, manufacture, and apply their coatings to a wide range of industrial products. Metallic and ceramic coatings protect critical metal components from a variety of environmental conditions, including wear, corrosion, and high temperatures. These coatings reduce maintenance, lower operating costs, increase product life, and improve efficiency.

IST Particle Analysis Technologies

IST's particle testing service takes advantage of many technologies to provide characterization of particle diameters from 0.6 nm to 2,000 µm. Among it's various aqueous and non-aqueous technologies, IST also uses the novel Tornado Dry Powder System, which creates high shear forces in a suspension of powder in air, enabling precise particle size analysis in a powder form.

The Coulter Principle

The Coulter Principle is the "Gold Standard" reference technology for counting and sizing particles using impedance measurements. IST routinely measures particles from 0.4 to 1,600 µm in diameter with a MultiSizer-4 instrument utilizing the Coulter Principle technology combined with an enhanced digital pulse processor.

The Coulter Principle

- Particles suspended in a conductive electrolyte solution are drawn through a small aperture.
- A DC current is applied, creating a "sensing zone". As each particle passes through the aperture, it displaces an amount of saline equivalent to its size, creating impedance resulting in a voltage pulse proportional to the particle volume.

Dynamic Light Scattering (DLS)

Dynamic light scattering is the predominant technology to characterize submicron and nanoparticles in liquid. Due to the Brownian motion of particles, DLS detects time fluctuation of scattered light, which is processed using either photon correlation spectroscopy (PCS) or frequency spectrum analysis, allowing for diffusion rates of particles to be determined and further particle size and size distribution information.

Laser Diffraction

The laser diffraction particle size analyzer utilizes the Fraunhofer and Mie theories of light scattering, and is so advanced that a single scan measures across 17 nm to 2,000 µm particle diameters without extrapolation. For particles larger than 100 µm in diameter, the Fraunhofer model produces results almost identical to those obtained with an optical model generated for the material and fluid. The Mie theory describes the interaction of light with a particle of arbitrary size as a function of angle.

Zeta Potential

Unlike particle size and shape which are the properties of particles only, zeta potential is also dependent on the environment surrounding the particles. IST uses a state-of-the-art instrument with DLS and Electrophoretic Light Scattering technologies to measure zeta potential and its distribution. Sample dilution is not required and 0.6 nm to 30 µm particle size ranges are measured routinely in aqueous and non-aqueous conditions with concentrations raging from 1 ppm to 40% (w/v).

The zeta potential of a particle dispersion is affected by the pH of the sample, the conductivity of the medium (concentration and type of salt), and the concentration of a particular additive (e.g. ionic surfactant, polymer), so these are controlled carefully at IST.

Digital Photomicroscopy

This service utilizes a Nikon Labophot Trinocular Microscope equipped with a SPOT RT3 microscope digital camera for both bright field and fluorescence imaging along with a calibrated scale for direct sizing reference of size range from 1 to 900 µm.

"From expertise to technology we're ready to provide the particle analysis you need ."

Carlos Aparicio, Ph.D., COO

Put IST to the Test...Today

How can we help you?

Contact us for a free consultation about the best approach to address your needs for QC, QA, R&D, and more

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Commitment to Quality

Quality, audit success and high customer satisfaction set IST apart. Quality is central to our work and the value we deliver to our customers. Every IST employee shares a commitment to maintain the highest quality of products and services through a full quality management system and extensive training.

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