A fully equipped microscopy and spectroscopy facility, MVA provides on-going investigative analytical testing services for a wide spectrum of industries.

**MVA’s testing services typically help clients answer:**

- What is the composition of this material?
- What is this contamination and where did it come from?
- What caused the corrosion?
- What is the particle size distribution of this material?
- What caused my product to be out of compliance?
- What is the surface structure of this material?

If you are an analytical lab, MVA can help you expand the testing services that your lab provides. Whether you need support with sample preparation, optical microscopy or electron microscopy services, MVA can work with you to provide the specific testing services you need.
Stack emissions are tightly regulated by USEPA and individual state agencies. For some stacks, PM10 and PM2.5 can be easily determined by weighing of size-separated fractions collected by cascade impactor or Method 201A cyclone samplers. But with improved particulate control technology, many stacks are now so clean that it is difficult for stack testers to use these gravimetric-based particle size measurement methods.

To help stack testers and their clients determine particle size distributions for these sources, MVA Scientific Consultants has developed microscopy-based methods of particle size distribution measurements.

These methods have provided valuable compliance data for power generators, boiler operators, cement kilns, waste incinerators and other operations where particulate emissions must be controlled. These methods can also be used to determine the particle size distributions in engineering studies, providing particle size data for use in design and optimization of emission control systems.

Stack testers and their clients may also want to know:

- What is in their particulate emission samples?
- Why are they out of compliance?
- Where in the process do the particles or M202 condensables come from?

MVA can help answer those questions using the same microscopy based particle characterization techniques.

Accreditations

- ISO/IEC 17025
- cGMP compliant
- FDA registered
- A2LA accredited

Stack Testing Lab Services

- Particle sizing (including PM10 & PM2.5)
- Particle shape analysis
- Particulate matter identification
- Back half catch residue (M202) identification
- Filter debris analysis
- Ambient air sample characterization
- Condensable analysis
Manufacturers encounter various issues during production processes that could hinder their manufacturing timeline. Faulty or substitute raw materials, contaminants in final products, coating and adhesion failures, surface defects, corrosion, and discoloration can all adversely affect the final product. Furthermore, they often impede production chains. Hence, manufacturers must rapidly identify the source of the problem to prevent further loss of time, money, and customers.

MVA Scientific Consultants has 25 years of experience in working with manufacturing facilities’ research & development, quality, packaging and customer return departments, helping solve their challenges. Our experience spans many different industries from personal care products, printing, electronic and medical to aerospace. MVA provides valuable independent analysis in a timely and reliable fashion while using cutting edge techniques to help clients determine the origin of the problem.

**Investigative Lab Services**
- Product failure analysis
- Product defect analysis
- Coating analysis
- Corrosion analysis
- Surface profile characterization
- Polymer characterization
- Wear debris analysis
- Adhesion and de-lamination analysis
- Dust testing
- Contaminant testing
- Materials characterization
- High resolution SEM & TEM imaging

**Accreditations**
- ISO/IEC 17025
- cGMP compliant
- FDA registered
- A2LA accredited

**Common Sample Types**
- Alloys
- Ceramics
- Metals
- Glass
- Polymers
- Plastics
- Coatings
- Packaging
- Paints
MVA Scientific Consultants is an FDA registered and cGMP compliant analytical service lab for pharmaceutical and medical device companies. A fully equipped microscopy and spectroscopy facility, MVA provides on-going analytical support for all phases of drug development for manufacturers needing to verify that their products are meeting specifications and guidelines.

MVA is a leader in particulate contaminant analysis. With drug recalls at a record high, pharmaceutical companies have to make sure that their products are free of unwanted particulates. When manufacturers find foreign particulates, they should immediately determine what the contaminants are, and take preventive action to avoid a bigger loss of time and money. In the case of a product recall, MVA provides timely and reliable service support to help manufacturers identify the foreign particulate and determine the source to help relieve the FDA’s concern.

**Pharmaceutical Lab Services**
- Foreign particulate identification
- Particle size distribution determination
- Particle shape analysis
- Drug polymorph characterization
- Drug morphology studies
- API/excipient distribution mapping
- High resolution SEM imaging
- Nonconformance analysis
- Root cause analysis
- Elemental mapping

**Common Sample Types**
- Glass vials
- Filters
- Parenteral solutions
- Syringes
- Drug powders
- Tablets
- Capsules
- Beads
- Solids

**Accreditations**
- ISO/IEC 17025
- cGMP compliant
- FDA registered
- A2LA accredited
Nanomaterials are increasingly used by manufacturers because of their unique properties in making products stronger and more durable. Due to their novelty, standardized nanomaterial analysis methods are uncommon. With the potential environmental and health impacts unclear, manufacturers incorporating nanomaterials should thoroughly characterize their products to determine the potential for nanoparticle release during usage. With over two decades of experience, MVA Scientific Consultants is a leader in the area of nanomaterial characterization.

If you are a nanomaterial manufacturer, MVA can provide the analyses to characterize your nanoparticles: particle size distribution, elemental composition, shape and morphology analysis.

If you are a product manufacturer, MVA can provide analyses to show the nanoparticle dispersion in the final product and also test for potential nanoparticle release during product use.

**Accreditations**
- ISO/IEC 17025
- cGMP compliant
- FDA registered
- A2LA accredited

**Nanomaterials Lab Services**
- Nanoparticle size, morphology, dispersion & homogeneity analysis
- Nanomaterials characterization
- Analysis of consumer products for nanomaterials
- Identification of nanomaterials
- Raman analysis of nanomaterials
- Contaminant analysis
- Competitors product comparison
- Crystalline phase determination
- Workplace nanoparticle exposure monitoring

**Common Sample Types**
- Certified reference materials
- Polishing suspensions
- Carbon nanotubes
- Quantum dots
- Nanopowders
- Metallic oxides (Ti, Zn, Fe)
- Polymer nanocomposites
- Carbon black
- Nanosilver
Particles in the environment come from both natural and industrial sources. Burning for power generation or waste incineration, grinding processes, material storage and transportation and other processes are common sources of industrial particles that may make their way into the environment. These small particles are easily transported and may end up at considerable distances from their original sources.

When neighbors of potential industrial sources of particles notice dark material or other unexpected particles collecting on surfaces, they may ask, “What are they?” “Where are they coming from?” and “Are they dangerous?”

**Can particle source be determined?**

MVA has over twenty years of experience in analyzing environmental particles and identifying their sources using microscopy. MVA can determine the composition and morphology of the suspect particles and identify likely sources, whether soil erosion, plant pollen, fungal material, fly ash or any number of other materials. When the particles are consistent with an industrial source, MVA can identify likely industrial processes and compare the suspect particles to known particles from those sources.

**Why is that important?**

This scientific information can help industrial facilities and their neighbors resolve disputes over who (or what) is responsible when unknown or unusual particles appear in their environment.
Industrial Hygiene Services

Unknown and unwanted dust and debris can make its way into homes and workplaces. These particles may be harmless, a nuisance or of greater concern: allergens, irritants and outright threats to health. Traditional industrial hygiene test methods like extraction/digestion followed by GC/MS or ICP do not usually give meaningful results when applied to the analysis of particles.

Can the particles in dust and debris be directly identified?

Yes. MVA Scientific Consultants has over twenty years of experience in the use of microscopy for the analysis and identification of dust and debris samples. Skin cells, soot, pollen, fungal material, animal hairs, soil minerals, construction debris, fiberglass, clothing fibers, insect parts, rubber and polymer fragments and many other components of dust and debris can be directly identified by the skilled scientists at MVA.

We use widely accepted standard methods from ASTM, EPA, OSHA and NIOSH as well as standard methods developed in-house based on our extensive experience with these samples.

Why should you identify the individual particle types?

Identification of the individual particles present in the dust or debris helps ensure that the workplace or home is free of dangerous contaminants. If they are found to be present, knowledge of their exact nature can help lead to the source, and their elimination.
Many legal cases, patent litigation and patent prosecution for example, are aided by the support of scientific data and evidence. Having a strong technical background in multiple disciplines and case work experience are the keys to providing the best litigation consultation support to law firm clients.

MVA Scientific Consultants has a wide range of experts including chemists, physicists, geologists, engineers and forensic scientists. With this variety of backgrounds, MVA provides scientific litigation support to help clients in product liability, intellectual property, insurance claims, toxic torts, and product failures.

We have over 25 years of experience in providing litigation support and expert testimony in state and federal courts throughout the country. Our scientists can effectively translate scientific and technical information for nonscientific participants in a clear and understandable manner.

**Litigation Support Lab Services**
- Interpretation of technical data
- Trial preparation
- Deposition and trial testimony
- Insurance investigations
- Environmental forensics
- Product failures
- Patent infringement
- Patent prosecution

**Accreditations**
- ISO/IEC 17025
- cGMP compliant
- FDA registered
- A2LA accredited

Through each investigative study, MVA strives to deliver the most unbiased, accurate, and reliable results to help our law firm clients get to the truth. MVA's staff works closely with law firm clients to put scientific data into graphical and video representations to illustrate and explain during briefings, meetings, and trials.