

# MICROCONTAMINATION SERVICES

Protection, Prevention, and  
Monitoring Management



Without measurement, there is no control.

# MICROCONTAMINATION SERVICES

## Lab Testing Services

### Sample Testing and Analysis

- Surface particles on complex parts
- Particles in UPW or chemicals
- Liquid filter efficiency testing
- Molecular outgassing of containers
- CMP slurry testing

### Professional Test Reports

- Description of work and objectives
- Test method and procedures
- Test data and charts
- Discussion and analysis of results

## Process Characterization Services

### On-Site Testing and Analysis

- Cleanroom air
- Ultrapure Water (UPW)
- Chemical delivery systems
- Wet benches
- Aerosol, liquid, and chemical filters
- Process gases and CDA
- CMP slurry delivery systems
- Minienvironments and other process tools

### Troubleshooting

- Identify sources of contamination
- Quantify levels by location and process
- Fast and thorough reporting and analysis

## Pharmaceutical Services

### Industry Compliance

- System design to cGMP (EU, US, and international)
- Validation documentation to GAMP
- Testing to IQ/OQ/PQ
- SOP assistance and training

### Laboratory Analysis

- US Pharmacopoeia (USP) testing for injectable drugs
- Particles on cleanroom consumables and containers
- Particles on orthopedic implants and medical devices



## Microcontamination Monitoring Services

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### On-Site Outsourcing of Microcontamination Needs

- On-site, full-time contractors from Particle Measuring Systems
- Facility monitoring and application support
- Data analysis and reporting
- Notification and troubleshooting of problems
- Instrument operation, maintenance, and calibration

### Remote Facility Monitoring

- Monitor facility through remote network software
- Data analysis and reporting
- Identification of statistical trends in production
- Notification of problems

## Training Services

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### Theory Training

- Particle physics
- Fundamentals of particle counters
- Molecular contamination theory
- Understanding the statistics of particle counting

### Application and Product Training

- Airborne particle monitoring and system design
- Particle monitoring in UPW and process chemicals
- Surface particle testing
- CMP Slurry monitoring
- Molecular contamination monitoring (AMC and SMC)
- ISO 14644 compliance
- Product operation, maintenance, and troubleshooting

## Consulting Services

### Design Consulting

- Facility monitoring system (FMS) design
- Choosing sampling locations and frequency
- Improving microcontamination levels
- Project management

### Analytical Consulting

- Data analysis from instruments and analyzers
- Determining sources of microcontamination
- Research and development (R&D) consulting



# PARTICLE MEASURING SYSTEMS IS THE RIGHT CHOICE

Microcontamination industry leader and most complete range of capabilities

Over 30 years of application experience and expertise

Inventors of laser-based particle counting technology

Pioneers of real-time molecular contamination monitoring in the semiconductor industry

Strong investments in research and development to remain the leader in microcontamination monitoring

Tailored solutions for each customer and each project

Global sales and support presence

Quality controlled operations and ISO 9001:2000 certification

Call a Particle Measuring Systems Services consultant to find out how we can help you protect your clean products and processes against microcontamination.



5475 Airport Boulevard, Boulder, Colorado 80301  
303.443.7100 1.800.238.1801 Fax: 303.546.7331  
Instrument Service and Support: 1.800.557.6363

Particle Measuring Systems Europe  
Tel: +44 (0)1684-581000

Particle Measuring Systems Japan  
Tel: 813-5298-8175

Particle Measuring Systems Singapore  
Tel: (65) 68460-500

Particle Measuring Systems China  
Tel: 86-21-53855332 -18



Registration applies to the Boulder, Colorado facility