



microcln.com

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# Pharmaceutical Regulated Cleanroom and HEPA Filter Testing Two-Day Seminar April 29-30, 2010

Our Professional trainers will cover an array of topics on Cleanrooms and HEPA Filters. Below is a brief description of the topics that will be discussed over this two day seminar. The seminar is designed with practical learning in mind. Students will not only learn the theory in a classroom setting but they will also be able to apply their knowledge in our state of the art technical center.  
Class begins at 9:00am and will end at 4:00pm, with lunch being provided.



## Understanding HEPA filters

- How HEPA Filter's Work
- Types of HEPA Filters
- HEPA Construction
- Performance Levels
- Resistance Airflows
- HEPA Filter Testing
- HEPA Filter Leak Testing

## Understanding Cleanrooms

- Pharmaceutical Cleanroom Layouts
- Typical Sterile Manufacturing Suites
  - Critical Areas
- Unidirectional Airflow Rooms
  - Controlled Areas
- Nonunidirectional Airflow Rooms

## Airflow Velocity Testing and Smoke Pattern Testing

- Testing Strategies
  - Air Exchange Rate
  - Controlled Area Calculations
  - Measurement of Total Supply Airflow
  - Testing in critical Areas
- Velocity Measurements in Critical Areas
- Validating Critical Airflow Performance
- Airflow Visualization Fog Generators
- Contamination Concerns



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**Assuring Performance of Critical Environments**

*Since 1974*



**Cert. No. CR159**  
Cleanroom Performance Testing

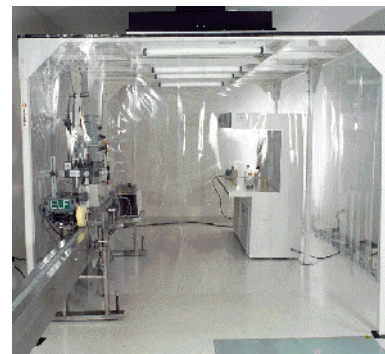


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**Federal Standard 209E vs. ISO 14644-1**

- Class Limits
- Particulate Size
- Locations
- Volume
- Time
- Statistical Analysis
- UCL Factor



**Room Pressurization and Recovery Tests**

- Pressurization Test
  - Procedure
  - Guidelines
- Room Recovery Test
  - Procedure
  - Documentation
  - Acceptance

**Aerosol Generators**

Differentiate between monodisperse (hot) and polydisperse (cold or poly-thermal) aerosol testing.

Explain how Aerosol Generators operate.

List alternative aerosols.

Describe components and functions of aerosol photometers

**HEPA Filter Integrity Test**

- Challenge Requirements
- Test Procedures
- Test Methods
- Acceptance Criteria

**Filter Patch**

How to guide

**Energy Savings Seminar**

**Please call or email Amber Cherry at 800-523-9852 x224 or ambercherry@microcln.com to confirm your interest in this class. Our intent is to limit the class to the first 15 respondents to keep the day as interactive as possible.**

**Terms and Conditions:** Cancellations received up to five business days before the seminar are refundable, minus a \$25 registration service charge. After that, cancellations are subject to the entire seminar fee. Please note that if you do not cancel and do not attend, you are still responsible for payment. Substitutions may be made at any time.



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