

AUTOPORE[®] V SERIES

MERCURY INTRUSION POROSIMETER



micromeritics[®]

OPERATOR TRAINING CHECKLIST

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(Rev A)

CORPORATE PROFILE

Micromeritics Instrument Corporation is the world's leading supplier of high-performance systems to characterize particles, powders and porous materials with a focus on physical properties, chemical activity, and flow properties. Our technology portfolio includes: pycnometry, adsorption, dynamic chemisorption, particle size, intrusion porosimetry, powder rheology, and activity testing of catalysts. The company has R&D and manufacturing sites in the USA, UK, and Spain, and direct sales and service operations throughout the Americas, Europe, and Asia. Micromeritics systems are the instruments-of-choice in more than 10,000 laboratories of the world's most innovative companies and prestigious government and academic institutions. Our world-class scientists and responsive support teams enable customer success by applying Micromeritics technology to the most demanding applications. For more information, please visit www.micromeritics.com.

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DOCUMENT REVISION HISTORY

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1. OVERVIEW

This document contains a checklist to be used for training of AutoPore V Series system operators. Place a check mark next to the items that were shown and discussed.

2. ORIENTATION

- _____ 1. General safety
- _____ 2. Table of contents and appendices
- _____ 3. Manual organization and conventions
- _____ 4. Equipment description
- _____ 5. Power up and power down sequence
- _____ 6. Analyzer and cable connections
- _____ 7. Front panel components
- _____ 8. Rear panel components
- _____ 9. Penetrometer choice, cleaning, handling, and assembly
- _____ 10. Trainee prepared penetrometer
- _____ 11. Fill mercury reservoir and high pressure ports
- _____ 12. Load samples into low pressure system
- _____ 13. Trainee allowed to load sample into low pressure system
- _____ 14. Menu structure
- _____ 15. Mouse and keyboard usage
- _____ 16. Trainee allowed time to become familiar with software operation
- _____ 17. Unit configuration
- _____ 18. Help menu
- _____ 19. Libraries

3. METHODS CREATION

- _____ 1. Methods creation
- _____ 2. Methods used in sample information files

4. SAMPLE FILE AND PARAMETER FILE CREATION

- _____ 1. File menu and sample file structure
- _____ 2. Sample file
- _____ 3. Penetrometer file
- _____ 4. Analysis conditions file
- _____ 5. Report options file
- _____ 6. Available reports
- _____ 7. Forms in Operator Manual appendix discussed

5. SAMPLE ANALYSIS

- _____ 1. On-screen components
- _____ 2. Manual control
- _____ 3. Starting and viewing low pressure analysis
- _____ 4. Low pressure sample unloading
- _____ 5. Sample for high pressure analysis loading
- _____ 6. Starting and viewing high pressure analysis
- _____ 7. High pressure sample unloading
- _____ 8. Effect of alternative analysis conditions
- _____ 9. Differential analysis
- _____ 10. Screen reporting of analysis in progress

6. THEORY OF OPERATION DISCUSSIONS

- _____ 1. Theory of mercury porosimetry
- _____ 2. Precautions
- _____ 3. Penetrometer functions
- _____ 4. Capacitance versus intrusion volume concept
- _____ 5. Pressure versus pore diameter concept
- _____ 6. Blank correction methods and need
- _____ 7. Equilibration

7. ANALYSIS REPORTS

- _____ 1. Interactive reports
- _____ 2. Starting default reports
- _____ 3. Changing sample file report options
- _____ 4. User-defined reports
- _____ 5. Printed reports
- _____ 6. Example reports
- _____ 7. Calculations (internet location)

8. OPTIONS MENU

- _____ 1. *Options* menu
- _____ 2. Presentation display options
- _____ 3. Default method
- _____ 4. Manage libraries
- _____ 5. Units of measurement selections
- _____ 6. Graph options
- _____ 7. Service test mode (For Trained Service Personnel Only)

9. TROUBLESHOOTING AND MAINTENANCE

- _____ 1. Error messages (Refer to Micromeritics Website.)
- _____ 2. Preventive maintenance procedures (Refer to Instrument Operators Manual.)
- _____ 3. Spilled mercury dish draining
- _____ 4. High pressure chamber cleaning
- _____ 5. Vacuum pump fluid inspection and replacement
- _____ 6. Vacuum pump exhaust filter replacement
- _____ 7. Low pressure port lubrication
- _____ 8. Chamber plug seals replacement
- _____ 9. Hydraulic pump fluid level maintenance

- _____ 10. Leak testing
- _____ 11. Valve overhaul and repair
- _____ 12. Low pressure system moisture removal
- _____ 13. Banana plug replacement
- _____ 14. Diagnostics

10. RETURNED GOODS AND PARTS ORDERING

- _____ 1. Returned goods policy
- _____ 2. Parts and accessories

11. WARRANTY STATEMENT

- _____ 1. Warranty policy

12. QUESTIONS

_____ All questions on operation resolved? (Enter **Yes** or **No**.)

If **No**, use the available space to document the question, then forward to the appropriate personnel at Micromeritics for resolution.

13. VERIFICATION

_____ All items on the Operator Training Checklist completed? (Enter **Yes** or **No**)

Name of trainer: _____

Date of training: _____

Company address: _____

Analyzer name: _____

Analyzer serial number: _____

The following section is to be completed by the primary operator trained during this session.
Please complete to acknowledge that installation training has been carried out to your satisfaction.

Operator verifying completion of training: _____

Date signed: _____

Operator's title: _____

Operator's phone number: _____