

AUTOCHEM[®] III 2930

AUTOMATED CATALYST CHARACTERIZATION SYSTEM



This Operator Training Checklist was reviewed and approved by:


Senior QC Auditor


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OPERATOR TRAINING CHECKLIST

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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.

PATENTS

For patent information, visit www.Micromeritics.com/patents.

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1. OVERVIEW

This document contains a checklist to be used for training of AutoChem III 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 and components discussion
- 5. Proper exhaust procedures
- 6. Power up and power down process
- 7. Analyzer and cable connections
- 8. KwikCool, KwikCool Vortex, and CryoCooler options
- 9. Sample tube: cleaning, handling, and assembly
- 10. Setup Mass Flow Controller valve for new gasses
- 11. Trainee prepared sample tube
- 12. Trainee allowed to load sample
- 13. Menu structure
- 14. Trainee allowed time to become familiar with software operation
- 15. Unit configuration
- 16. Help menu
- 17. Libraries

3. *HARDWARE INSTALLATION AND USE*

- _____ 1. Furnace mounting and removal
- _____ 2. Sample thermocouple position
- _____ 3. Sorption trap and delay loop installation
- _____ 4. Septum use
- _____ 5. Cooling options
- _____ 6. Sample tube
- _____ 7. Sample quantity and loading

4. *METHODS CREATION*

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

5. *SAMPLE FILE AND PARAMETER FILE CREATION*

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

6. *SAMPLE ANALYSIS*

- _____ 1. Analysis tutorial section in Operator Manual
- _____ 2. Sorption trap installation
- _____ 3. Start, suspend, monitor, and cancel analysis
- _____ 4. Indicators, prompts, and valves

- _____ 5. Effect of alternative analysis conditions
- _____ 6. Screen reporting of analysis in progress
- _____ 7. Overlay Experiment View, Stacked Experiment View, and Peak Editor
- _____ 8. Loop calibration
- _____ 9. Auxiliary inputs and outputs
- _____ 10. Gas calibration
- _____ 11. Trap regeneration

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. Active metals
- _____ 6. Signal calibration
- _____ 7. Units of measurement selections
- _____ 8. Report style
- _____ 9. 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. Clean the equipment
- _____ 4. Clean or change the sorption trap or delay path
- _____ 5. Change the sorption trap O-ring
- _____ 6. Clean or change the foam air filter
- _____ 7. Change the sample tube filter
- _____ 8. Change the septum
- _____ 9. Reposition replace, or adjust the sample thermocouple
- _____ 10. Recalibrate the sample thermocouple
- _____ 11. Perform a leak test
- _____ 12. Perform a reference material analysis
- _____ 13. Perform a mass flow controller calibration (if applicable)
- _____ 14. Change gas cylinders
- _____ 15. Vent the gas exhausts
- _____ 16. Purge gas
- _____ 17. Change the injection loop
- _____ 18. Attach the AutoCook or optional CryoCooler
- _____ 19. Diagnostics

10. RETURNED GOODS AND PARTS ORDERING

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

11. WARRANTY STATEMENT

- _____ 1. Warranty policy

12. SERVICE AND SUPPORT CHECKLIST

Prior to contacting Micromeritics for instrument service and support, please have the following information and the required files available:

- _____ 1. Model number: _____
- _____ 2. Unit serial number: _____
- _____ 3. Software Version (found on the software **Help** menu): _____
- _____ 4. Diagnostic .ZIP file (**Unit [n] > Diagnostics > Save Files for Problem Diagnosis**)
- _____ 5. Relevant SMP sample files
- _____ 6. Images of error messages (if any)
- _____ 7. Details describing the series of actions leading to the problem
- _____ 8. Helium Baseline test (when applicable)
- _____ 9. MIC Reference materials (TPR or CHEMI, when applicable)

14. 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: _____