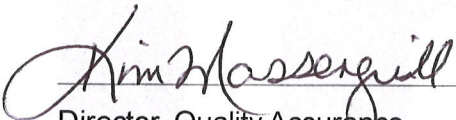# MICROACTIVE ASAP® 2020 PLUS
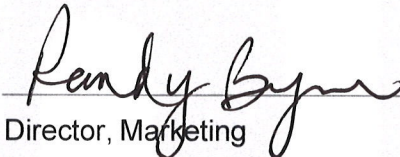
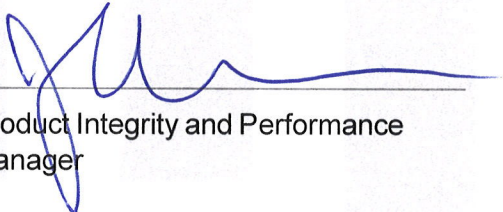## ACCELERATED SURFACE AREA AND POROSIMETRY SYSTEM

This Operator Training Checklist was reviewed and approved by:

_____
Director, Quality Assurance

_____
Director, Marketing

_____
Service Manager - Americas

_____
Product Integrity and Performance Manager

OPERATOR TRAINING CHECKLIST

ABOUT MICROMERITICS

Micromeritics Instruments Corporation is a leading global provider of solutions for material characterization with best-in-class instrumentation and application expertise in five core areas: density; surface area and porosity; particle size and shape; powder characterization; and catalyst characterization and process development. Founded in 1962, the company is headquartered in Norcross, Georgia, USA and has more than 300 employees worldwide. With a fully integrated operation that extends from a world class scientific knowledge base through to in-house manufacture, Micrometrics delivers an extensive range of high-performance products for academic research and industrial problem-solving. The implementation of tactical partnerships to incubate and deliver valuable new technologies exemplifies the company's holistic, customer-centric approach which extends to a cost-efficient contract testing laboratory – the Particle Testing Authority (PTA). The strategic acquisitions of Freeman Technology Ltd and Process Integral Development S.L. (PID Eng & Tech) reflect an ongoing commitment to optimized, integrated solutions in the industrially vital areas of powders and catalysis.

Freeman Technology (Tewkesbury, UK) brings market-leading powder characterization technology to Micromeritics' existing portfolio of particle characterization techniques. The result is a suite of products that directly supports efforts to understand and engineer particle properties to meet powder performance targets. With over 15 years of experience in powder testing, Freeman Technology specializes in systems for measuring the flow properties of powders. In combination with detailed application know-how these systems deliver unrivalled insight into powder behavior supporting development, formulation, scale-up, processing and manufacture across a wide range of industrial sectors.

PID Eng & Tech (Madrid, Spain) complements Micromeritics' renowned offering for catalyst characterization with technology for the measurement and optimization of catalytic activity, with a product range that extends to both standard and bespoke pilot scale equipment. Launched in 2003, PID Eng & Tech is a leading provider of automated, modular microreactor systems for the detailed investigation of reaction kinetics and yield. These products are supported by a highly skilled multidisciplinary team of engineers with in-depth expertise in the design, construction and operation of laboratory units and process scale-up.

The Particle Testing Authority (PTA) provides material characterization services for fine powders and solid materials using Micromeritics' instrumentation alongside complementary solutions from other vendors. With the certification and expertise to operate across a wide range of industries the PTA offering runs from single sample analysis to complex method development, method validation, new product assessment, and the analytical support required for large scale manufacturing projects. An experienced, highly trained team of scientists, engineers, and lab technicians works closely with every client to ensure that all analytical requirements are rapidly and responsively addressed.

Micromeritics has a strong global network with offices across the Americas, Asia, and Europe complemented by a dedicated team of distributors in additional locations. This ensures that local, knowledgeable support is available for every customer, in academia or industry. Micromeritics works across a truly diverse range of industries from oil processing, petrochemicals and catalysts, to food and pharmaceuticals, and at the forefront of characterization technology for next generation materials such as graphene, metal-organic-frameworks, nanocatalysts, and zeolites. Engineering solutions that work optimally for every user is a defining characteristic of the company.

DOCUMENT REVISION HISTORY

REV	ECN #	Description of Change	Checked By	Date
-	150001	Formal Release	E. Schreter	02/09/2015
A	150380	Added ASAP 2020 Share	E. Schreter	07/29/2015
B	180246	Added 21 CFR Part 11	*M. Ast.*	3/28/2019

1. OVERVIEW

This document contains a checklist to be used for training of MicroActive ASAP 2020 Plus system operators in standard and 21CFR11 environments. In each of the sections, place a check mark next to the items that were shown and discussed.

Section Number	Sections	Standard Users	Confirm Users
1	Overview	✓	✓
2	*Orientation on the next page*	✓	✓
3	*Confirm Administrators on page 9*		✓
4	*Verification on page 11*	✓	✓

2. ORIENTATION

_____	1. Table of Contents and Appendices
_____	2. Manual organization and conventions
_____	3. Equipment description
_____	4. Power up and power down sequence
_____	5. Analyzer and cable connections
_____	6. Purging of gas lines
_____	7. Sample tube choice, cleaning, handling, and assembly
_____	8. Trainee prepared sample tube
_____	9. Degasser connection (if applicable)
_____	10. Degas system
_____	11. Loading samples onto degas system
_____	12. Trainee allowed to load sample
_____	13. Menu structure
_____	14. Mouse and keyboard usage
_____	15. Trainee allowed time to become familiar with software operation
_____	16. Unit Configuration
_____	17. *Help* menu
_____	18. Libraries

METHODS CREATION

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

SAMPLE FILE AND PARAMETER FILE CREATION

Standard Environments and Confirm Developers

	1. File menu and sample information file structure
	2. Sample information file
	3. Sample tube file
	4. Degas conditions file
	5. Analysis conditions file
	6. Adsorptive properties file
	7. Report options file
	8. Available reports

Confirm Analysts

	1. File menu and sample information file structure in Basic option presentation
	2. Sample information file
	3. Sample tube file
	4. Degas conditions file
	5. Analysis conditions file
	6. Adsorptive properties file
	7. Report options file
	8. Available reports

SAMPLE ANALYSIS

PHYSICAL ADSORPTION

_____	1. Sample loaded onto degasser and degassing started
_____	2. Degassed sample unloading
_____	3. Sample tube installation
_____	4. Starting and viewing analysis
_____	5. Indicators, prompts, and valves
_____	6. Effect of alternative analysis conditions
_____	7. Adsorption dosing and equilibration
_____	8. Screen reporting of analysis in progress
_____	9. Vapor analysis

CHEMICAL ADSORPTION

_____	1. Sample tube installation
_____	2. Install chemical adsorption assembly and furnace.
_____	3. Starting and viewing an analysis
_____	4. Indicators, prompts, and valves
_____	5. Effect of alternative analysis conditions

ANALYSIS REPORTS

_____	1. Interactive reports
_____	2. Starting default reports
_____	3. Changing sample file report options
_____	4. Surface area and t-plot calculation adjustment
_____	5. User-defined reports
_____	6. Printed reports
_____	7. Example reports
_____	8. Calculations (internet location)

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 mode

DIAGNOSTICS

	1. Dashboard
	2. Show all readings
	3. Diagnostics tests

TROUBLESHOOTING AND MAINTENANCE

_____	1. Error messages (internet location)
_____	2. Preventive maintenance procedures
_____	3. Analysis port filter replacement
_____	4. Reference material analysis details and analysis frequency
_____	5. Connecting gas cylinders
_____	6. System calibration

RETURNED GOODS AND PARTS ORDERING

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

WARRANTY STATEMENT

_____	1. Warranty policy

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.

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3. CONFIRM ADMINISTRATORS

GROUPS AND USER ACCOUNTS

_____ 1. Enter Confirm user accounts

_____ 2. Modify Confirm user accounts

_____ 3. Create Confirm groups

_____ 4. Add Confirm members to groups

LOCK AND UNLOCK THE APPLICATION

_____ 1. Lock and unlock the application

PASSWORD ADMINISTRATION

_____ 1. Change password settings

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.

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4. 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: _____