

# ***ASAP<sup>®</sup> 2060***

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***ACCELERATED SURFACE AREA AND POROSIMETRY SYSTEM***



## ***PRE-INSTALLATION INSTRUCTIONS AND CHECKLIST***

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## ***CONTACT Us***

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## ABOUT THIS MANUAL

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The following icons may be found in this manual:



**NOTE** - Notes contain important information applicable to the topic.



**CAUTION** - Cautions contain information to help prevent actions that may damage the analyzer or components.



**WARNING** - Warnings contain information to help prevent actions that may cause personal injury.

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## Table of Contents

Contact Us .....	i
About this Manual .....	iii
Pre-installation Document Overview .....	1
<b>Section 1 - Pre-installation Instructions .....</b>	<b>1</b>
Unpacking and Inspection .....	1
Shipping Damage .....	1
Analyzer Space .....	2
Installation Configuration .....	3
Computer System .....	3
Environmental Factors .....	4
Power .....	4
Temperature and Humidity .....	4
Ventilation .....	4
Hazards and Precautions .....	4
Safety Measures .....	5
Gas Supply .....	5
Gas Cylinders and Gas Supply Lines .....	5
Gas Supply Hardware .....	6
Regulator Expansion Kits .....	7
Laboratory Equipment and Supplies .....	8
Application Related Issues .....	9
Gas for Analyzer Test .....	9
Personnel Security Clearance .....	9
Projected Installation Date .....	10
Commitment Statement / Signature .....	10
<b>Section 2 - Pre-installation Checklists .....</b>	<b>11</b>
Unpacking and Inspection Checklist .....	11
Analyzer Space Checklist .....	11

---

Installation Configuration Checklist .....	11
Environmental Factors Checklist .....	12
Computer System Checklist .....	13
Gas Supply Checklist .....	14
Laboratory Equipment and Supplies Checklist .....	14
Application Related Issues Checklist .....	15
Personnel Security Clearance Checklist .....	15
Projected Installation Date .....	16
Commitment Statement and Signature .....	16



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## ***PRE-INSTALLATION DOCUMENT OVERVIEW***

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If a Micromeritics service technician performs this installation, additional charges apply. Please see [Contact Us on page i](#) for information on how to contact Micromeritics.

This document describes how to prepare a site for installation of the ASAP 2060. When the enclosed procedures have been completed, signed, and dated, return the document to Micromeritics as outlined in [Commitment Statement and Signature on page 16](#).

The document is organized into two sections:

- **Section 1 - Pre-installation Instructions.** Contains information to help analyze the site and answer the questions in the checklist contained in Section 2 of this document.
- **Section 2 - Pre-installation Checklist.** Contains questions and a checklist about analyzer location and the laboratory environment, equipment, and supplies.

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## ***SECTION 1 - PRE-INSTALLATION INSTRUCTIONS***

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### ***UNPACKING AND INSPECTION***

When the shipment is received, unpack and inspect the contents of the shipping carton(s). Use the packing list to verify that all listed items are intact and in the correct quantity. Sort through all packing material before declaring missing items.



Save all shipping cartons where equipment is to be declared as damaged or lost. The claims investigator must examine the cartons prior to completion of the inspection report.

### ***SHIPPING DAMAGE***

If equipment is damaged or lost in transit, you are required to make note of the damage or loss on the freight bill. The freight carrier, not Micromeritics, is responsible for all damage or loss occurring during shipment. If damage or loss of equipment is discovered during shipment, report the condition to the carrier immediately. Insurance claims **MUST** be made with the freight carrier, **NOT** Micromeritics.

- Keep all software, manuals, and accessories with the equipment.
- Report any shipping damage immediately to the carrier and follow their directions.
- Report missing or wrong parts to Micromeritics, in addition to any shipping damage, only after filing a claim with the carrier.

- Micromeritics will NOT file a claim for shipping damage.
- Do not discard shipping boxes and containers until installation is complete.

## ***ANALYZER SPACE***



An unobstructed lab work space that will accommodate the following specifications is needed:

Equipment	Space needed
<b>ASAP 2060 Analyzer</b>	Height. 93.0 cm (36.6 in.) Width. 36.5 cm (14.4 in.) Depth. 36.5 cm (14.4 in.) Weight. 36.5 cm (14.4 in.)
<b>Computer and Printer</b>	Width. 96.5 cm (38 in.) (approx.)
<b>Gas Supply</b>	<ul style="list-style-type: none"><li>• 1 square ft (0.1 square m) for each gas cylinder needed for installation.</li><li>• For standard installation, the cylinders must be within 6 ft (1.8 m) of the instrument.</li></ul>

## INSTALLATION CONFIGURATION

Standard installation requires the use of 1/8 in. (0.3175 cm) copper or stainless steel gas supply lines, located in the instrument accessories kit.

A nonstandard installation will be created if another gas supply line is used or if the gas cylinders cannot be placed within 6 ft (1.83 m) of the analyzer. There may be additional costs associated with a nonstandard installation. Please contact the Micromeritics Service Manager to discuss a nonstandard installation.

## COMPUTER SYSTEM

We recommend that the computer be purchased from Micromeritics. Micromeritics thoroughly tests operating systems with the Micromeritics applications and offer technical support and maintenance for the computers we provide. For analyzers not installed by Micromeritics, please note:



- The labor and expense costs associated with delays traceable to a computer system not purchased from Micromeritics are not part of a standard installation.
- Micromeritics is not responsible for providing assistance for the connection to a company network or LIMS.
- During installation, Administrator rights will be required to make changes to the Ethernet settings. If access cannot be granted to the Service Engineer, an IT representative must be readily available to make these changes.

The computer system to be used with the analyzer must meet the following minimum requirements:

- **Operating System.** Windows 7 Professional or higher operating system is recommended for the best user experience.
- **Desktop Installation Required.** The application should not be installed on a network drive with shared access. Multiple users cannot operate the application at the same time.
- **10 Base T or 100 Base T Ethernet Port.** If the computer is to be connected to a network, two Ethernet ports are required. If more than one Ethernet based unit is connected to the same computer (or if a Smart VacPrep is purchased), an Ethernet switch will also be required.
- **Read / Write Permissions.** All users of the application will need Read/Write permission to all directories and subdirectories where the application is installed.
- **Drives.** CD-ROM drive and thumb drive.

## ***ENVIRONMENTAL FACTORS***

### ***POWER***

The ASAP 2060 is designed to operate with a universal input power supply (100 / 115 / 230 VAC) at 50 or 60 Hz. Noise-free power of the correct voltage and frequency, with a safety earth ground, should be available through a standard wall receptacle. The power outlet should be able to supply 15 amps @ 100 or 115 VAC  $\pm 10\%$  or 7.5 amps @ 230 VAC  $\pm 10\%$ . These requirements can be checked by using a circuit analyzer (available at most hardware or electronic supply houses) or a multimeter. There should also be sufficient outlets for the analyzer, Smart VacPrep (if purchased), vacuum pump system, computer, monitor, and printer and any other peripheral devices.



The analyzer and peripheral devices **must** be installed on their own dedicated power line. Other devices — such as motors, generators, or ovens — **should not** be placed on the same power line.

### ***TEMPERATURE AND HUMIDITY***

Temperature and humidity must be controlled to within:

- **Temperature:** 10 to 35 °C (50 to 95 °F) operating; 0 to 50 °C (32 to 122 °F ) nonoperating
- **Humidity:** 20 to 80% relative, non-condensing

#### **Do Not:**

- Allow room temperature or humidity to exceed limits.
- Install the analyzer where it is exposed to direct sunlight.
- Locate the analyzer near air conditioning or heating vents.

### ***VENTILATION***

The area reserved for installation of the ASAP 2060 should be well ventilated.

The compressor needs sufficient air flow.

### ***HAZARDS AND PRECAUTIONS***

Inform Micromeritics of any on-site conditions that may present hazards to Micromeritics employees or equipment. Advise Micromeritics of any precautions that need to be taken.

## ***SAFETY MEASURES***

Inform Micromeritics of any safety equipment, requirements, or procedures necessary for Micromeritics employees to enter and install the system at your facility.

## ***GAS SUPPLY***

### ***GAS CYLINDERS AND GAS SUPPLY LINES***

See [Gas for Analyzer Test on page 9](#) for the analytical gases needed during installation. Gas cylinders must be placed within 6 ft (1.8 m) of the analyzer inlet valves.

- The customer is required to ensure the purity of gases.
- It is required that the 1/8 in. (0.3175 cm) × 6 ft (1.8 m) single piece copper gas line in the analyzer accessories kit is used. Stainless steel gas lines are available from Micromeritics for use with gases that are not compatible with copper.



Gas supply lines made of materials other than copper or stainless steel may cause operational problems.

- **Do not** use gas cylinders with less than 500 psig (3549 kPag) pressure.
- **Do not** use any other gas lines to connect the gas supply to the analyzer.
- **Do not** use gas purifiers; they can cause operational problems.

## ***GAS SUPPLY HARDWARE***

Micromeritics recommends the gas regulators to be used with the analyzer be purchased from Micromeritics. The regulators Micromeritics provides have been carefully evaluated and tested to provide superior performance.



If purchased from a source other than Micromeritics, please keep in mind that many commercially available gas regulators lack key features which are required for gas adsorption measurements. These vital criteria must be met:

- **Cleanliness.** Clean regulators designed specifically for high-vacuum service are required. Other regulators often contain elastomeric material or oils which can contaminate the gas.
- **High stability.** Excess pressure at the gas inlet ports to the analyzer can interfere with accurate gas dosing and flow rates. The combined change in the outlet pressure from the gas regulator, as the gas cylinder pressure decreases or as the flow rate stops, should not change more than 5 psig (34.4 kPag) from the selected setting. When the analyzer is idle for an extended period of time, such as 8 to 10 hours, this same stability of gas delivery pressures should be achieved.
- **Suitable sub-assemblies.** The regulator must have a shutoff or outlet isolation valve compatible with 1/8 in. (0.3175 cm) or 1/4 in. (0.6 cm) Swagelok® compression fittings.

## ***REGULATOR EXPANSION KITS***

It is sometimes beneficial to attach more than one analyzer, and/or accessory device, or different inlet ports to a single gas supply. Any time this is done, it is critically important that there be a means of isolating, or shutting-off, each device attached to the gas supply regulator. Micromeritics recommends the use of a vacuum rated shutoff/isolation valve for this purpose.

This shutoff/isolation valve is required in order to prevent problems when changing gas cylinders or servicing any of the devices attached to the gas supply.

If the need to attach more than one inlet or one analyzer and/or accessory device is anticipated, one or more of the following regulator expansion kits must be acquired:

- **004-33601-00** – Regulator Expansion Kit (2 outlet, 1000 psi maximum). This kit contains one T fitting, two vacuum rated shutoff valves, and other necessary hardware. This expansion kit allows gas to be provided to two inlets.
- **004-33601-01** – Regulator Expansion Kit (3 outlet, 1000 psi maximum). This kit contains one cross fitting, three vacuum rated shutoff valves, and other necessary hardware. This expansion kit allows gas to be provided to three inlets.

## ***LABORATORY EQUIPMENT AND SUPPLIES***

### ***LIQUID NITROGEN***

Ensure liquid nitrogen is available in sufficient quantities. There should be 3 to 10 liters as a minimum requirement for starting an analysis.

- For installation, there **must** be an adequate supply of liquid nitrogen.
- **Do not** use liquid nitrogen that is either blue (a sign of oxygen contamination) or not clear.

### ***ANALYSIS EQUIPMENT AND SUPPLIES***

Since the analysis results are expressed in units of surface area per gram of sample, the true mass of the sample must be known. This requires an analytical balance with the capacity of 100 grams measurement and 1 mg readability.

In order to obtain accurate analysis results, the penetrometers must be clean. The following items are suggested for cleaning penetrometers:

- Alconox® or similar laboratory detergent
- Brush
- Drying oven
- Isopropyl alcohol
- Sink
- Small plastic tub for detergent solution



## ***APPLICATION RELATED ISSUES***

To ensure a thorough installation, it will be helpful for Micromeritics to know which types of samples will be tested. If known, list them in [Application Related Issues Checklist on page 15](#).

Please advise us if your samples require any pretreatment. If required, do you have the proper equipment, such as a vacuum oven or furnace to pretreat your samples?

Micromeritics offers application assistance through our materials analysis laboratory (Micromeritics Analytical Services).

## ***GAS FOR ANALYZER TEST***

To verify proper operation and to train users, Micromeritics representatives will analyze the reference material provided in the analyzer accessories.

The following gases are required in order to analyze the reference materials. If these gases are not available, Micromeritics representatives will only be able to perform a limited number of analyzer tests during installation and operator training.



All gases require the indicated purity.

- (CGA 580) N<sub>2</sub> 99.999%
- (CGA 580) He 99.999%
- (CGA 580) Kr 99.995% (for krypton units only)

Any additional gases that may be used after the installation is complete can be connected by the Micromeritics

## ***PERSONNEL SECURITY CLEARANCE***

If security clearances, insurance certificates, or any other special arrangements are required for Micromeritics employees to enter your facility, see [Personnel Security Clearance Checklist on page 15](#) to explain. Inform Micromeritics how much advance notice you require to obtain clearance.

## ***PROJECTED INSTALLATION DATE***

After reading the site preparation requirements in this document, enter a date your site will be prepared and a preferred date for installation. After returning the checklist to Micromeritics, your Micromeritics representative will contact you to confirm an installation date. See [Projected Installation Date on page 16](#).

## ***COMMITMENT STATEMENT / SIGNATURE***

Read this document carefully and complete all checklists. If unsure about any part of this document or the checklist, contact the Micromeritics Service Department for clarification. When this Pre-installation Checklist has been completed, see [Commitment Statement and Signature on page 16](#). Sign and date the form, then send it to Micromeritics.

Within the United States, send the completed and signed checklist to one of the following:

Service Operations Manager / 1-770-662-3604

Service.Helpdesk@Micromeritics.com

Micromeritics Instrument Corporation  
ATTN: Service Operations Manager  
4356 Communications Drive  
Norcross, GA / USA / 30093-2901

Outside the United States, send the completed and signed checklists to your Micromeritics representative.

## SECTION 2 - PRE-INSTALLATION CHECKLISTS

For each question, circle **Yes** if the condition applies to your laboratory or **No** if it does not. When this *Pre-installation Checklist* has been completed, see [Commitment Statement and Signature on page 16](#). Sign and date the form, then send it to Micromeritics.

### UNPACKING AND INSPECTION CHECKLIST

Unpacking and Inspection		
Have the shipping cartons been unpacked and their contents inspected?	Y	N
Was there any shipping damage?	Y	N
If Yes, has a claim been filed with the freight carrier?	Y	N
Were all items listed on the packing list received?	Y	N
If <b>No</b> , has Micromeritics been notified?	Y	N
Was an Ethernet switch purchased with the analyzer or is there one available, if needed?	Y	N

### ANALYZER SPACE CHECKLIST

Analyzer Space		
Can the lab area where the analyzer and computer will be placed accommodate the combined dimensions of the analyzer, accessories, computer, and printer?	Y	N

### INSTALLATION CONFIGURATION CHECKLIST

Installation Configuration		
Will 1/8 in. (0.375 cm) copper gas supply lines (supplied with the analyzer for standard installation) be used?	Y	N
Will gas supply cylinders be available within 6 ft of the analyzer gas inlet ports (for standard installation)?	Y	N

**ENVIRONMENTAL FACTORS CHECKLIST**

Environmental Factors		
Is power available with the correct voltage and frequency, and a safety earth ground?	Y	N
Are temperature and humidity controlled within specifications?	Y	N
Are hazards present or precautions necessary in area of installation?	Y	N
If <b>Yes</b> , please explain:		
Are safety measures required?	Y	N
If <b>Yes</b> , please explain:		

**COMPUTER SYSTEM CHECKLIST**

Computer System		
Was the computer purchased from Micromeritics?	Y	N
If <b>NO</b> , does the computer meet Micromeritics' minimum requirements?	Y	N
Will the computer be connected to the local network?	Y	N
If <b>YES</b> , will two Ethernet ports be available during the installation?	Y	N
Will there be more than one Micromeritics Ethernet based analyzers connected to this computer?	Y	N
If <b>YES</b> , will an Ethernet switch be available during the installation?	Y	N
All application users are required to have Read / Write permission to all directories and subdirectories where the application is installed. Will these permissions be set prior to installation?	Y	N
Will the Micromeritics Service Engineer have Administrator rights to the computer?	Y	N
If <b>NO</b> , will an IT representative be available?	Y	N

## ***GAS SUPPLY CHECKLIST***

<b>Gas Supply</b>		
Are gas cylinders located within 6 ft (1.83 m) of the area where the instrument will be installed?	<b>Y</b>	<b>N</b>
Were gas regulators purchased from Micromeritics?	<b>Y</b>	<b>N</b>
If <b>NO</b> , do your gas regulators meet Micromeritics' specifications?	<b>Y</b>	<b>N</b>
<b>Required Gases</b>		
Are the following <b>required</b> gases available? <u>The installation will not be scheduled until these gases are available:</u>		
• (CGA 580) N <sub>2</sub> 99.999%	<b>Y</b>	<b>N</b>
• (CGA 580) He 99.999%	<b>Y</b>	<b>N</b>
• (CGA 580) Kr 99.995% (krypton is optional)	<b>Y</b>	<b>N</b>
<b>Additional Gases</b>		
Additional gases for use after installation can be connected by the Micromeritics service representative. Please list any gases that will be available for connection during installation.		

## ***LABORATORY EQUIPMENT AND SUPPLIES CHECKLIST***

<b>Laboratory Equipment and Supplies</b>		
Are sufficient quantities of liquid nitrogen available?	<b>Y</b>	<b>N</b>
Are sufficient quantities of isopropyl alcohol available?	<b>Y</b>	<b>N</b>
Is a balance available for weighing samples?	<b>Y</b>	<b>N</b>
Is a drying oven or sample degasser available?	<b>Y</b>	<b>N</b>

**APPLICATION RELATED ISSUES CHECKLIST**

Application Related Issues		
What types of samples will be tested?		
Will these samples require pretreatment?	Y	N
Will any application assistance from Micromeritics Analytical Services be required?	Y	N

**PERSONNEL SECURITY CLEARANCE CHECKLIST**

Security Clearance		
Are there any special arrangements required concerning security clearance?	Y	N
If <b>Yes</b> , please explain:		

***PROJECTED INSTALLATION DATE***

When would installation be most convenient? Date: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

(This is not a commitment for a specific installation date.)

***COMMITMENT STATEMENT AND SIGNATURE***

I have read this document and understand my responsibilities regarding preparations for the installation of our analysis system. I believe this site is ready for the system to be installed.

Signature: \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title (Printed): \_\_\_\_\_

Company: \_\_\_\_\_

City / State / Zip: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

Analyzer: \_\_\_\_\_

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date: \_\_\_\_\_

Is the Customer Representative also the End User?    **Yes**    **No**