MIC SAS® II 5800

SUB-SIEVE AUTOSIZER

micromeritics®

Effective Solutions for
Material Characterization

ERROR MESSAGES

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CORPORATE PROFILE

Micromeritics Instrument 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, Micromeritics 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.

CONTACT US

Micromeritics Instrument Corporation
4356 Communications Drive
Norcross, GA / USA / 30093-2901
Phone: 1-770-662-3636
Fax: 1-770-662-3696
www.Micromeritics.com

Instrument Service or Repair
Phone: 1-770-662-3666
International — contact your local distributor or call 1-770-662-3666
Service.Helpdesk@Micromeritics.com

Micromeritics Learning Center
Phone: 1-770-662-3607
www.Micro.edu

ERROR MESSAGES

If the *Action* response indicates to contact a Micromeritics service representative, record the error message, then make backup copies of any files involved in the operation.

1 **Piston could not be engaged in [*n*]s. Analysis canceled.**

Cause: Obstructing piston movement will result in this error.

Action: Remove obstruction.

2 **Initial porosity [*n*] could not be reached in [*n*]s. Analysis canceled.**

3 **Porosity [*n*] could not be reached in [*n*]s. Analysis canceled.**

4 **Porosity [*n*] could not be reached. Analysis canceled. Check entered mass and density of sample.**

Cause: Sample mass or density is incorrect, or mass and density are not within 5%.

Action: Check the sample mass and density.

5 **Flow rate adjustment timed out. Analysis canceled.**

6 **Flow rate ramp timed out. Analysis canceled.**

Cause: Particle size may be outside of instrument specifications. There may be a problem with the gas supply.

Action: Check that the gas supply pressure is adequate and consistent. Check that the regulator pressure is set according to the instrument operator manual. Check for leaks or kinks in the external gas lines. Check for blockages or obstructions on the piston, anvil, and sample tube plugs.

7 **Some flow rates required to maintain stable pressure are too small and unsupported by the instrument hardware. Results may be inaccurate.**

Cause: Particle size may be outside of instrument specifications.

Action: Contact a Micromeritics service representative if this error message continues.

8 **Pressure build-up detected. Flow stopped.**

Cause: High pressure caused by combination of flowing gas while an obstruction on the anvil is present.

Action: Remove blockage.

9 **Could not set flow rate during initialization. Check gas supply.**

Cause: During initialization of the instrument, the MFC is set to 5 sccm and then back to 0 sccm. If the MFC cannot be set, this most likely means that the gas supply is disconnected.

Action: Check that the gas supply pressure is adequate and consistent. Check that the regulator pressure is set according to instrument operator manual.. Check for leaks or kinks in the external gas lines. Check for blockages or obstructions on the piston, anvil, and sample tube plugs.

10 **USB printer is not attached. Print job is queued.**

Cause: Print after analysis is selected, but the printer is either not configured, not connected to a USB port, or not turned on.

Action 1: Ensure that the printer is connected to the instrument and turned on. Ensure that the printer is configured for use with the instrument. The report will be sent when the printer is ready. See the MIC SAS II 5800 Operator Manual part number 580-42800-01.

Action 2: Turn off printing after analysis in the *Maintenance* view. See the MIC SAS II 5800 Operator Manual part number 580-42800-01.