

PMI Q-BET

Surface Area Analyzer

Principle:

An adsorbed film invariably forms on a clean surface exposed to a gas. Adsorbed films also form on pore surfaces of porous materials. The amount of adsorbed gas on a surface at a constant temperature depends upon pressure. The PMI Quick-BET measures the pressure and computes the number of moles adsorbed from the difference between the number of moles of the gas allowed to flow into the system (computed from the flowrate of the gas) and the final number of moles of the gas left in the system. The BET theory of gas adsorption is used to compute the surface area from the measurement of the amount of adsorption as a function of pressure.

Operating procedure:

- ◆ The sample is placed in the sample chamber. Mass, and density of the sample are entered in the test settings of the fully automated instrument.
- ◆ The sample is evacuated slowly to remove any adsorbed gases. (If required, the sample is pretreated at a suitable temperature under vacuum).
- ◆ Once degassing is complete, the user is prompted to install liquid nitrogen dewar flask. The gas is allowed to flow into the system.
- ◆ The flow rate and gas pressure are constantly measured and surface area is reported at the end of the test.

Features:

- ◆ Performs surface area (single point and multi-point) analysis.
- ◆ Pore Volume can be measured.
- ◆ Very fast, as little as four minutes.
- ◆ Highly reproducible.
- ◆ In-situ degassing of samples. Transfer of samples from degassing station to test station is not required. Therefore, contamination of sample associated with transfer is eliminated.
- ◆ Automated calibration routines
- ◆ Automated operation and minimal operator involvement.
- ◆ Very little maintenance.
- ◆ Robust & Inexpensive



Specifications:

1-800-TALK-PMI

Surface area range: 0.1 m²/g and higher

Sample volume: 5 cc (others available)

Pressure gauge: 0-1,000 mmHg
Resolution: 1 part in 10,000
Accuracy: 0.15 % of reading.

Flow controller: 30 cc/min
Accuracy: ± 1 % FS
Repeatability: ± 0.1 % FS

Adsorption temperature: -195.6°C (liquid nitrogen temperatures)

Adsorbate: N₂, Ar

Cooling system: Liquid nitrogen in 1.5 L Dewar

Degassing system: Heater oven up to 300°C (higher temperatures available) Degassing and testing performed in-situ.

Power requirements: 110/220 VAC, 50/60 Hz

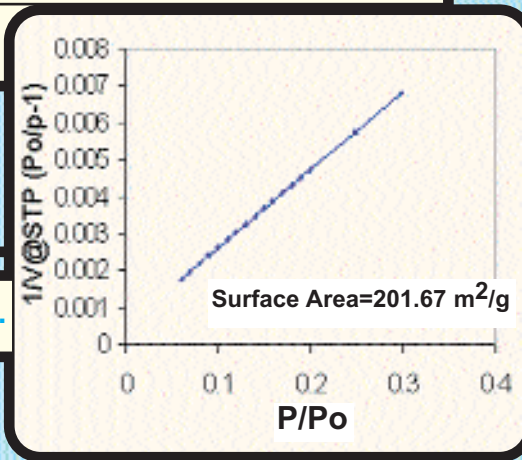
Size: 16" x 14" x 10" (40 x 35 x 25 cm) (approximately).

Weight: 25 lbs (11.5 kg) (approximately).

Applications:

Ideal for rapid generation of reproducible data for...

- ◆ Pharmaceutical products
- ◆ Ceramics
- ◆ Catalysts
- ◆ Ion-exchange resins
- ◆ Powders
- ◆ Cement
- ◆ Zeolites
- * Carbon blacks
- * Abrasives
- ◆ Cosmetics



Surface Area Plot

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