

PRIMA Gas Pycnometer

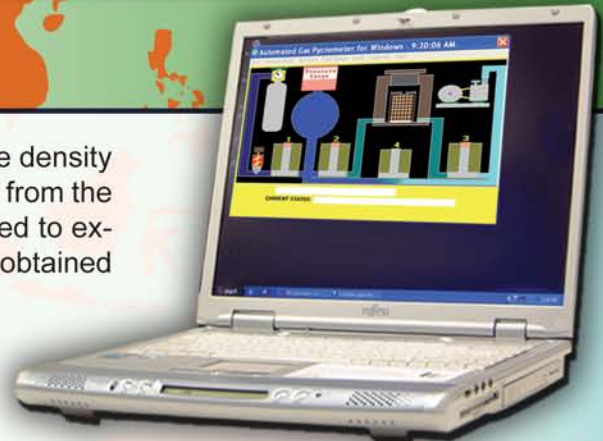
Principle

PMI gas pycnometer is used to determine the true volume and true density of powders and bulk solids. The true volume of a solid is calculated from the measured drop in pressure when a known amount of gas is allowed to expand into a chamber containing the sample. Thus, the true volume obtained by pycnometry excludes any pore volume accessible to the gas. Helium is the preferred gas, because it exhibits ideal gas behavior. However, almost any non-corrosive gas including air can be used. The true density is obtained by dividing the weight of the sample by true volume.



Operating Procedure

PMI gas pycnometer is used to determine the true volume and true density of powders and bulk solids. The true volume of a solid is calculated from the measured drop in pressure when a known amount of gas is allowed to expand into a chamber containing the sample. Thus, the true volume obtained by pycnometry excludes any pore volume accessible to the gas. Helium is the preferred gas, because it exhibits ideal gas behavior. However, almost any non-corrosive gas including air can be used. The true density is obtained by dividing the weight of the sample by true volume.



Specifications

Sample Size: 25 cc and 100 cc (others available upon request).
Number of sample chambers: 1, 2, 3, 4, or 5
Accuracy & Reproducibility: 0.1 %
Power requirements: 110/220 VAC, 50/60 Hz
Size: 12" X 28" X 22" (25 X 70 X 55 cm) (approximately).
Weight: 60 lbs (27 kg) (approximately).
Software: Windows 95/98/NT/00/ME compatible.

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GAS PYCNOMETRY ANALYSIS

Test Type: VACUUM
 Test Date: 06-22-2001

Sample ID: Polypropylene resin
 Mass: 10.481 gm

Reference Volume: 11.31 cc
 Sample Chamber Volume: 24.96 cc

PFO PSIA	PIO PSIA	PI PSIA	PF PSIA	VOLUME (cc)	DENSITY (gm/cc)
00.003	00.003	09.798	04.399	11.073	00.947
-00.003	-00.002	09.802	04.394	11.051	00.948
-00.003	-00.002	09.796	04.392	11.055	00.948
-00.003	-00.003	09.792	04.394	11.076	00.946
-00.003	-00.003	09.796	04.393	11.060	00.948
				Average Volume : 11.063 cc	
				Average Density : 0.947 +/- 0.001	

Hardware

- Three different test methods provide the most accurate results: Vacuum, high pressure and ambient pressure.
- Pressure relief valve prevents over pressurization of pressure gauge.
- Any non-corrosive and non-absorbing gas can be used.
- Use of metering valve provides excellent control on the amount of gas (pressure) that can be used for the test.
- Slow evacuation for powder samples prevents powder from being dragged into the vacuum pump.
- Minimal operator involvement.

Software

- Windows 95/98/NT compatible software enables convenient use of the instrument.
- User defined pressures can be used to test the samples.
- The user can specify the number of times the test is to be repeated within the specified standard deviation.
- Automatic pressure and volume calibration routines for different kind of test methods.
- Software allows the user to perform a test in the manual mode.
- Software allows the user to store different test settings so that the settings can be recalled and used for future testing.
- Test results can be stored to disk and printed directly.

Optional Features

- Elevated temperature testing (density of the sample at high temperature)
- Multiple sample chambers and reference volumes

Other Products

Average Fiber Diameter Analyzer
Bubble Point Tester
Capillary Flow Porometer
Capillary Condensation Flow Porometer
Complete Filter Cartridge Analyzer
Clamp-On Porometer
Compression Porometer
Custom Porometer
Cyclic Compression Porometer
Envelope Surface Area Analyzer
Filtration Media Analyzer
High Flow Porometer
Integrity Analyzer

In-Plane Porometer
Microflow Porometer
Nanopore Flow Porometer
QC Porometer
Diffusion Permeameter
Gas Permeameter
Liquid Permeameter
Vapor Permeameter
Water Vapor Transmission Analyzer
Liquid Extrusion Porosimeter
Mercury/Nonmercury Intrusion Porosimeter
Vacuapore
Water Intrusion Porosimeter (Aquapore)

BET Liquisorb
BET Sorptometer
Gas Pycnometer
Mercury Pycnometer

Also Available:
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