



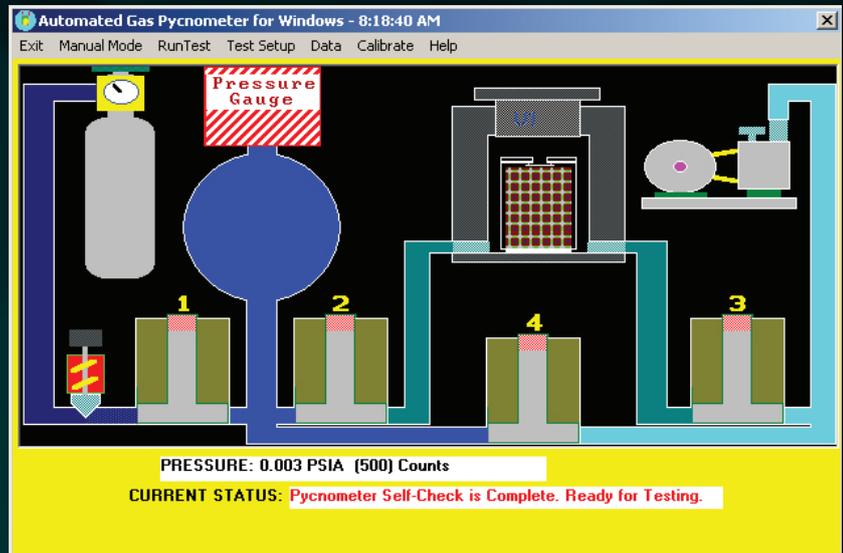
**THE PMI
AUTOMATED GAS
PYCNOMETER
PYC-100A**

Not just products...solutions!

Operating Procedure

PMI's Automated Gas/Helium Pycnometer is used to determine the true volume and true density of powders and bulk solids using high-precision volume measurements and density calculations. 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 sample.

Thus, the true volume obtained by pycnometry includes 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.



Applications

- Automated Industry
- Battery/Fuel Cells Industry
- Ceramic Industry
- Chemical Industry
- Nonwovens Industry
- Pharmaceutical/Medical Industry
- Powder Metallurgy Industry

Porous Materials, Inc. Analytical Services Department
 20 Dutch Mill Road
 Ithaca, NY 14850 USA
 Phone 607-257-4267, 2575544 or 1-800-825-5764
 E-mail: info@pmiapp.com
 www.pmiapp.com

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

Specifications

- **Sample Size:** 10 Cm³, 50 Cm³ and 135 Cm³
- **No. of Sample Chamber:** 1
- **Sample Type:** Single sample loading feature, combined with automatic repeated run for user specified maximum no. of runs ease of operation & high performance.
- **Sample Cells:** 3 Aluminum Sample of different size
- **Sample volume:** 0.1 to 150 Cm³
- **Accuracy:** ±0.05% of full scale volume
- **Total Analysis Time:** Less than 5 minutes
- **Instrument can repeat measurements automatically with user defined settings**
- **Operating Range:** 1 Psig to 20 Psig
- **Power Supply:** 240V +/- 10% AC / 1 Ph / 50 Hz
- **Gas type:** Nitrogen/Helium
- **Includes calibration volumes**

Gas Connection:

Unit is supplied with a two stage stainless steel diaphragm pressure regulator with an inlet pressure of 180 kg/cm² (g) and an outlet pressure range of 1-30 Psig. Regulator includes CGA fitting, 1/8" Swagelok output connector and isolation valve.

- **Pipes and helium cylinder has to be arranged by the user.**

Software Features

- Windows based
- Automatic Pressure and Volume Calibration routines.
- Under user selected tolerances.
- Graphic presentation of the data to be evaluated and analysis results.
- Provision for off-line data processing.
- Integrated detailed help system.
- Exporting graphic files to window based word / excel processing files for report generation.
- Capable to be programmed for automatic repeat measurements or for data acquisition.



Sales & Services



Our sales team is dedicated to helping our customers find which machine is right for their situation. We also offer custom machines for customers with unique needs. To find out what we can do for you, contact us. We are committed to customer support including specific service products, short response times & customer specific solutions. To quickly & flexibly meet our customer's requirement, we offer a comprehensive range of services.

Customize your machine today!

Hardware

- *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*

Features

- *Nondestructive*
- *Test Substance*
- *Automated Control*
- **Pore Structure Characteristics: Absolute Density**
- **Operating Mode:** *PMI Automated Gas/Helium Pycnometer can be operated via personal computer (PC) in either automatic or manual modes.*

Computer

For control of the instrument, as well as on and offline data analysis and storage, the computer is provided.

CPU chip: 3.1 GHz I5-2400 processor, with 2 GB of RAM, at least 500 GB Hard drive, 4 USB ports and CD/DVD RW, USB keyboard and USB scroll wheel mouse. 18.5" TFT monitor. Includes Windows 7 Pro operating system.

The most advanced, accurate, easy to use
and reproducible Pycnometers in the world.

Celebrating



of solutions



20 Dutch Mill Rd, Ithaca, NY 14850, USA

Toll Free (US & Canada): 1-800-TALK-PMI (1-800-825-5764)

Phone: 607-257-5544 Fax: 607-257-5639

Email: info@pmiapp.com

www.pmiapp.com