

# Mercury Pycnometer

## Principle

Mercury does not wet many of the materials and requires pressure to enter the pores of the material. At atmospheric pressure, mercury cannot enter pores that are smaller than about 15 microns. Therefore, the weight of mercury in a sample chamber of known volume, containing a sample of known weight, is used to compute bulk density of the sample.

## Instrument

The instrument consists of a glass sample chamber, a glass mercury reservoir and four valves. The sample cell has a wide mouth for introducing samples, a vacuum-tight lid and a narrow stem that is connected to the instrument through an o-ring seal. Two valves are used to evacuate the cell, one is used to fill the cell with mercury and the fourth valve is used to drain the cell.



## Features

- Very simple
- Any nonwetting liquid can be used
- Minimum contact with mercury
- Mercury recovery possible

## Specifications

**Sample Cell:** 1 inch Diameter x 1.5 inch Height (2.5 – 4 cm), Others available

**Reproducibility:** Better than 0.5 %

**Power:** 110/220 V.A.C, 50/60 Hz

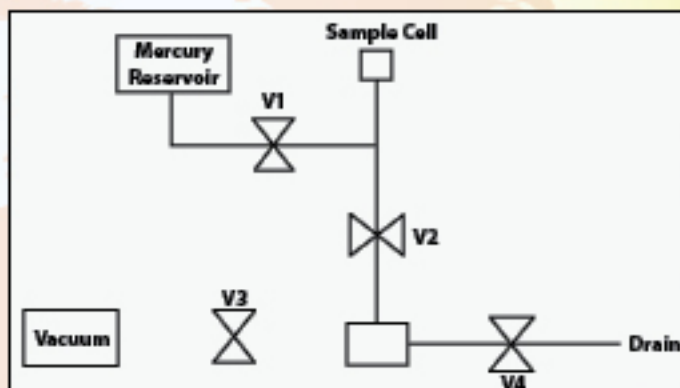
**Dimensions:** 25 inches H x 11 inches W x 15 inches D (64 cm H x 28 cm W x 38 cm D)

**Weight:** 30 lbs (14 kg)

**Note:** Specifications subject to variance in different models

## Operation

Sample cell is weighed. Cell with sample is weighed and placed in the instrument. An external vacuum pump is used to evacuate the cell. After sufficient vacuum is attained, mercury is allowed to surround the sample in the cell. The cell containing the sample and mercury is weighed. The bulk density is computed from the known weights, known volume of cell and the density of mercury. The volume of the cell is computed by a calibration experiment in which the sample is not used.



## Other Products

Bubble Point Tester  
Capillary Flow Porometer  
Capillary Condensation Flow Porometer  
Complete Filter Cartridge Tester  
Clamp-On Porometer  
Compression Porometer  
Cyclic Compression Porometer  
Envelope Surface Area Analyzer  
Filtration Media Analyzer  
In-Plane Porometer  
Integrity Analyzer  
Microflow Porometer

Multi-Chamber and Multi-Mode 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  
Water Intrusion Porosimeter (Aquapore)  
Multipoint Simultaneous Pore Structure Analyzer

BET Liquisorb  
BET Sorptometer  
Gas Pycnometer  
Mercury Pycnometer  
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